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VIII. *A Monograph of the Lepidopterous Genus* Castnia *and some allied Groups.*

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(Plates XXVIII.–XXXIII.)

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Notwithstanding the vast additions which have been made during the last quarter of a century to the lists of species of Lepidopterous insects, especially by the entomologists of our own country, the observation of Latreille, in his most valuable and classical work the 'Genera Crustaceorum' &c., vol. iv. p. 186 ("Lepidopterorum ordo entomologorum scopulus: horum insectorum etenim instrumenta cibaria simplicia; antennæ pro sexu diversæ; metamorphoses permultorum nobis ignotæ; idcirco nepotes nostri *methodum optimam* soli conficient"), is almost as true now as it was when written, seventy years ago. In fact, the circumstance of such great numbers of species, for the most part of exotic origin, being added to the already numerous tribes of Butterflies and Moths, without, in the greater number of cases, any actual knowledge of their transformations or special structure being furnished by the captors or describers, has only tended to render that "still darker which was dark enough before." If, at the same time, we turn to the generic distribution of these insects, we are bewildered by the infinite number of new groups which have, as it appears to me, most unnecessarily been introduced into the science, and the never-ending change in the employment of old generic names. This has in a great degree resulted from an insufficient appreciation of the relative value of the characters which constitute a species and the illogical raising of such characters to a generic rank. Thus no sooner had I published a monograph of the Australian species of sac-bearing Moths, for which I adopted the generic name of *Oiketicus*, proposed by the Rev. Lansdown Guilding, in the 'Transactions of the Linnean Society,' in which paper I described the varying structure of the antennæ, wing-veins, and cases formed by the larvæ, than my specific details were seized upon, and each species erected into a genus, characterized from my figures. Again, we have seen in a recent American publication some of the Swallow-tailed Butterflies, which had universally been considered a species of the old genus *Papilio*, separated off from the rest, and formed into different genera; whilst the old generic name *Papilio* has been entirely removed from the family, and applied to one of the genera, or rather to one of the species of the genus *Vanessa*—each of the other species of the latter group being also raised to generic rank, whilst almost every species of North-American Hesperiidæ has been formed into a separate genus. If, again, we look at the general classification of the Order in the hope of supplying the desideratum of a "methodus optima," to which Latreille especially alluded in the paragraph quoted above, I fear we are but little further advanced towards the attainment of that end than our forefathers. By the employment

of the transformations, and especially by the structure of the veins of the wings, feet, antennæ, palpi, tongue, and other characters of the imago, we have arrived at certain results as to the characters of certain groups which had formerly been comparatively only partially examined; yet the want of a general revision of all the groups of the Order in the same philosophical manner, has still left us in doubt as to the proper clue to the classification and relations of the families and still higher primary divisions of the Order. I do not hesitate to say that the attempts to characterize and systematize the families and subfamilies of Nocturnal Lepidoptera hitherto made are total failures.

Another difficulty, unknown to the older writers upon this order of insects, has arisen from the exploration of numerous adjacent localities, which, whilst it has added greatly to our knowledge of new and quite distinct species, has also shown that the wide geographical range of a species is often attended with the development of slightly modified races, which have by some writers been indifferently regarded as distinct species, or have been sunk to the rank of local varieties. Thus, of the gigantic types of the diurnal Lepidoptera which, from their size, have been well named *Ornithopterus*, and which are natives of the East, we find the single species, *Papilio Priamus*, in Mr. Kirby's Catalogue, made to comprise not fewer than seventeen of these local forms. These have been specifically named, and regarded by others as distinct species, namely:—1. *P. Priamus*, Linn.; 2. *Panthous*, Linn.; 3. *Richmondia*, G. R. Gray; 4. *Cassandra*, Scott; 5. *Euphorion*, G. R. Gray; 6. *Pronomus*, G. R. Gray; 7. *Poseidon*, Doubleday; 8. *Cronius*, Felder; 9. *Boisduvalii*, Montrouzier; 10. *Oceanus*, Felder; 11. *Arruana*, Felder; 12. *Urvilliana*, Guérin; 13. *Triton*, Felder; 14. *Pegasus*, Felder; 15. *Archideus*, Felder; 16. *Lydias*, Felder; 17. *Crœsus*, Wallace.

Another series of Eastern Butterflies, of which *Papilio Paris* is the type, distinguished by having their wings powdered with golden-green atoms, exhibits a number of permanent variations of no higher specific rank than those of the *Priamus* group in their respective localities; yet we find each of them, in Mr. Kirby's Catalogue, given as a distinct species.

The solution of this difficulty can only be hoped for by the very careful investigation of such Protean species in their native haunts, with reference to their appearance in the adjacent and intervening localities, so as, if possible, to determine how far the specific type becomes modified (at least, so far as the markings of the wings are concerned) by change of situation and other local circumstances. And here it is to be observed that possibly too much weight has been given to the mere markings of the wings, without sufficient attention to the question whether they are accompanied by structural differences. It was, for instance, with considerable doubt that I at first regarded several of the Heliconiiform species of *Castnia* described below as specifically distinct; the investigation of their wing-veins, however, satisfactorily proved that they were structurally different from each other. But paradoxical as it may at first appear, the publication of descriptions of Butterflies and Moths (unless belonging to well-defined and previously characterized genera) has probably become the greatest obstacle in the way to our knowledge of the real "methodus optima" desiderated by Latreille. I do not hesitate to affirm that the publication of the hundreds, nay, even thousands of careless and insuffi-

cient descriptions, especially of Moths, in this country during the last twenty years, will embarrass and disgust the student to such an extent as to retard the inquiry into the general distribution of the Order, as well as the relations of the various families *inter se*, for years to come. Without going to the extreme length which Mr. Scudder has done in extending the characters of every genus over four or five closely printed pages (embodying every point of the structure of the type in every stage of its existence, thereby converting specific characters into generic ones), I yet hold that the description of a Lepidopterous insect, without a thorough examination of its structural characters, is not only detrimental to the science, but disgraceful to the author*.

In like manner the entire alteration in the old and well-established systems of classification, both of the Rhopalocerous and Heterocerous Lepidoptera, and the substitution in their stead of other systems which have only the charm of novelty and the love of change to support them, is, as it appears to me, detrimental to the real advance of science. I see, for instance, no reason or even advantage in removing the six-legged Papilionidæ from the head of the order, and substituting in their stead the Nymphalidæ, with their imperfect fore feet, advocated by the German writers, and servilely adopted by their English followers; neither can I approve of the displacement of the gigantic Bombycidæ (*Saturnia*, &c.) from the head of the Nocturnal Lepidoptera.

We thus perceive that, with respect to the discrimination of many species, or the limitations of genera and families, or the general distribution of the primary groups of the Order, we are scarcely further advanced than we were in the days of Latreille. The genus *Castnia* of Fabricius affords an illustration of the various difficulties to which I have above alluded. By Linnæus and all the writers of the last century the species of this interesting genus with which they were acquainted were regarded as Butterflies, being arranged under the genus *Papilio*, on account of the clubbed structure of the antennæ. On the dismemberment of that great group, at the commencement of the present century, by Fabricius and Latreille, the genus *Castnia* was established; but it was still retained by the former as the 7th genus of the Butterflies, between the genera *Cethosia* and *Euplœa*, characterized only by the structure of the palpi and antennæ †; whilst Latreille, in all his works, placed it (with *Agarista* &c.) at the head of the Crepuscularia, between the Hesperiidæ (with which the *Uraniæ* were united) and the Sphingidæ.

The connexion of these insects with the Diurnal Lepidoptera rests only on the structure of their antennæ, and on their evidently diurnal habits evinced by the brilliancy of their colours. But when the antennæ are carefully examined they do not bear out this con-

* It would, in this place, indeed be unjust not to refer to the admirable manner in which Mr. Stainton has worked out the economy and structure of the small and difficult groups of the Linnean genus *Tinea*, in his different works on the Microlepidoptera, whereby he has laid down the groundwork of a classification of these beautiful tribes, which had previously been enveloped in doubt and difficulty. His figures also of the veining of the wings of these small and difficult insects, as well as those given by the late Dr. Herrich-Schäffer in his 'Systematische Bearbeitung der Schmetterlinge von Europa,' will greatly assist the student in his investigation of the relations of these insects.

† System. Glossat. (Ed. Illiger, Mag. Ins. vi. 277, 1822). In Mr. Children's abstract of this system, given in Taylor's Phil. Mag. for 1830, the generic name *Castnia* is misprinted *Castina*.

nexion, differing materially from the real Rhopalocerous structure; whilst their connexion with the Hesperiidæ is more remote than with any other group of the Diurna, in consequence of the simple arrangement of the veins of the wings in the Hesperiidæ. The complicated arrangement of the wing-veins in *Castnia*, and the metallic gloss of the very large scales (which are much larger than in any other Lepidopterous genus) with which most of them are clothed, and the rich coloration of nearly all the species, in like manner separate them from all the other groups of Heterocerous Lepidoptera.

The large and robust structure of the *Castniæ*, together with their very ample wings, separate them from all the groups to which they are assimilated by their transformation, except the gigantic *Hepiali* and *Cossi*, from which they are at once distinguished by the veining of the wings and their clavate antennæ.

In the complicated arrangement of the wing-veins, and especially in the existence of the minute supplemental postcostal cell, we find an approximation to the Geometridæ; the details of so many species of which are illustrated by Herrich-Schäffer. But the weak structure of these moths and their geometric larvæ, destitute of several pairs of the ventral pro-legs, will not allow any approximation between the *Castniæ* and *Geometræ*.

Another curious circumstance connected with the group, and which is not without its significance in respect to their general relation, is the analogical resemblance exhibited by some of the species to that strange family of Butterflies, the Heliconiidæ; to these latter we find similar resemblances exhibited by species, not only of other Heterocera, as among the Arctiidæ, but also amongst the most typical of all the butterflies forming the family Papilionidæ, as well as amongst the Pierides and Erycinides.

Hence with regard to the actual relations of the *Castniæ*, in the uncertainty which still exists as to the preponderance to be given to the characters derived either from the immature or perfect state of the articulated animals, we can arrive at no other conclusion than that which Dr. Boisduval has given in his last work, 'Hist. Nat. des Ins. Lepidopt. hétérocères:'—"La famille des Castnides appelées Hesperi-sphinx par l'illustre Latreille, quoiqu'elles n'aient pas plus de rapports avec les Hesperies qu'avec les Sphinx. Ce sont des insectes d'une création à part, qui sous leurs premiers états, ont à la fois les habitudes des Sésiides et des Zeuzérides, mais auxquels il est difficile d'assigner une place" (Pref. p. iv).

The veining of the wings in this genus offers several modifications of much interest with reference to the typical arrangement of these organs in the order Lepidoptera. In their simplest form in the fore wings they may be thus described:—1st. A strong simple branchless vein, running parallel with and close to the front margin of the fore wing (the costal vein); 2nd. A vein arising close behind the base of the costal vein, but dividing into six branches before reaching the extremity of the wing (the subcostal or postcostal vein and its branches); 3rd. The strong median vein, separating into four branches; 4th. The subanal vein, simple and branchless, but sometimes accompanied by one or two rudimental longitudinal vein-like folds. In most instances, in order to give support to the middle of the fore wing, there is a transverse veinlet connecting the 6th branch of the postcostal (*b* 5*) and the 4th branch (*c* 3*) of the median veins, forming a closed cell (the discoidal cell). But in all the families of Butterflies (except the Papilionidæ) the median vein has

apparently only three branches, and the postcostal vein only five branches; the two intermediate branches, namely the 6th branch of the postcostal (*b* 5*) and the 4th branch (*c* 3*) of the median veins, have been assumed to be distinct from those veins, and to constitute the remains of a vein intermediate between the postcostal and the median, of which the basal portion has been aborted or seen only in a fold running towards the base of the wing between those two veins. To these two detached branches Mr. Doubleday applied the names of the 1st or upper discoidal nervule, and the 2nd or lower discoidal nervule; the little transverse veinlet connecting the 5th branch of the postcostal vein with the upper discoidal nervule he termed the upper disco-cellular nervule; that connecting the upper and lower discoidal nervules together he termed the middle disco-cellular nervule; and that connecting the fourth median (or lower discoidal) nervule with the third branch of the median vein he termed the lower disco-cellular nervule (these three disco-cellular nervules closing the discoidal cell); the longitudinal fold or obsolete vein between the bases of the postcostal and median veins within the discoidal cell, he termed the discoidal nervule.

From the very great number of specimens of Lepidopterous insects of all families, both diurnal and nocturnal, which I have examined, I prefer to treat the first or upper discoidal nervule as part of the system of the postcostal vein and the second or lower discoidal nervule as portion of the median system. But in order to mark the distinction between these two aberrant nervules or branches and the true branches, or veinlets, or nervules of the postcostal and median veins, I have, in the Plates of details of structure illustrating this memoir, distinguished the upper or first discoidal nervule with the mark *b* 5*, and the lower or second discoidal nervule as *c* 3*.

In thus differing from the system of venation proposed by the late Mr. Edward Doubleday in his paper on *Argynnis*, published in the 'Linnean Transactions,' and in the introduction to the 'Genera of Diurnal Lepidoptera,' I cannot but admit the propriety of the adoption of the stems of the veins as of primary importance—contrasted with the plan of Herrich-Schäffer and other German writers, who seem to regard the branches as of primary value, counting them (quite independently of their origin from the stems) numerically upwards from the anal angle, from 1 to 12:—No. 1 being the anal vein (my *d*); Nos. 2, 3, 4 the three branches of the median vein; 5 and 6 the two disco-cellular veins (or my *c* 3* and *b* 5*); 7, 8, 9, 10, 11 the five branches of the postcostal vein, and 12 the costal vein†.

Many years ago I had a long controversy with the late M. Alex. Lefebvre on this subject, in consequence of his adoption of the principle that the fold indicating the vein in the discoidal cell of the fore wing, and running thence towards the outer margin, formed the true line of demarcation between the branches of the postcostal and median veins. The fold in question is, of course, the representative of the discoidal vein; and an examination of the figures accompanying this memoir, or those of Herrich-Schäffer's

† In his elementary plate, H.-Schäffer omitted one of the branches of the postcostal vein, and so gave only 11 ribs (as he terms the branches). Assmann (Schmett. Schles. tab. A. f. 1) counts the "Adern" of the fore wing from 1 to 14, adding the two supplemental anal veins, which are sometimes, although very rarely, to be observed.

work, will show the complete irregularity in the position of this discoidal vein and its divisions.

The large moths of the genus *Gastropacha* are excellent instances in which the arrangement which I have endeavoured to establish is shown. In *G. repanda* (H.-Schäffer, Syst. Bearb. Schm. Eur. pl. xviii. fig. 3), the median vein is seen to have four branches, the upper one of which (*c* 3*) arises from the third branch (*c* 3), at the lower extremity of the discoidal cell, whilst the other, upper, accessory branch, my *b* 5*, arises from the preceding, *b* 5, far beyond the discoidal cell, forming as clearly a portion of the postcostal system as *c* 3* does of the median, there being no trace of a discoidal vein within the discoidal cell.

Aglaope infausta (H.-Schäffer, Syst. Bearb. Schm. Eur. pl. xiii. fig. 32) presents us with an interesting example, in which the arrangement of Mr. E. Doubleday is excellently shown. Here the last branch of the postcostal vein (*b* 5) extends to the tip of the fore wings, and the discoidal cell is divided into two nearly equal parts by the discoidal vein, which, extending nearly from the base of the wing, branches into two equal branches (my *b* 5* and *c* 3*), leaving the three branches of the median vein at equal distances apart.

In *Leucophasia sinapis* (see H.-Sch. *op. cit.* pl. v. fig. 11) the arrangement of the branches is very instructive. Here, in consequence of the very small size of the discoidal cell, all the branches of the postcostal vein arise quite regularly on the anterior side of the vein beyond the cell, the fifth (*b* 5) extending to the tip of the wing; but the two accessory and the three branches of the median vein are all equally independent at their origin at the end of the short oval discoidal cell, and appear to be parts of one system of veins distinct from the postcostal.

In many of the Geometridæ, as may be seen especially in the 9th plate of Herrich-Schäffer's work on European Lepidoptera, vol. vi., not only is the small postdiscoidal cell, as I have called it (*cellula accessoria* of H.-Sch.), found in the *Castniæ* present, but it is even divided into two cellulets by a more or less oblique cross vein.

In the Hesperiidæ, on the other hand, the discoidal cell of the fore wing is elongate-ovate, and all the branches of the postcostal and median veins, as well as the two accessory branches (*b* 5* and *c* 3*), arise from the extremity of the discoidal cell at nearly equal distances apart, without any trace of the discoidal vein within the cell; so that it is impossible, except from analogy, to determine whither each of the several systems of veins extends.

The same arrangement is also seen amongst the Heterocerous Lepidoptera, as in the fore wing of *Scardia mediella* (H.-Sch. *op. cit.* vi. pl. Microl. iii. fig. 1), and in *Nemotois scabriosella* (ib. pl. iv. f. 32).

In some species of Hesperiidæ, however, as in *Eudamus* (*Megathymus*) *yuccæ*, the postcostal and median systems are easily distinguished, although their two outer branches, *b* 5* and *c* 3*, are united by an extremely slender and angulated veinlet imperfectly closing the discoidal cell.

From the numerous figures given in Pls. XXVIII. and XXIX., it will be seen that the branches both of the postcostal and median veins exhibit much irregularity in their

arrangement as compared with the simple system seen in so many other groups of Lepidoptera. The number of branches is normally present; but the 2nd, 3rd, 4th, and 5th branches of the postcostal (*b* 2, *b* 3, *b* 4, and *b* 5) are generally arranged so that they form a small oblong premedian or postcostal cell. Looking at Pl. XXVIII. fig. 6 (*C. cacica*), we see that this is effected by the branch *b* 3 throwing off a very short transverse branchlet connecting it with *b* 4; or, rather, we may say that *b* 4 commences transversely, and then suddenly bends at a right angle, and runs longitudinally, so that the little transverse branchlet must be regarded as its basal portion. In *b* 5 we have the anomaly that the 5th branch arises at a short distance beyond the 1st branch, and forms the hinder margin of the postcostal cell, throwing off a little oblique branchlet, by which it is united to the 4th branch, and which in fact forms part of the extremity of the postcostal cell. In like manner the median vein (*c*) has its third branch (*c* 3) strongly angulated at a right angle at its base, whilst the branch *c* 3* (lower discoidal nervule of Doubleday) is carried backwards by a fold (*z*), the discoidal nervure of Doubleday, and almost to the base of the wing †. Moreover the veinlet connecting *b* 5* and *c* 3* is angulated below its middle, throwing off backwards a fold which unites with 3, and which indicates the normal position of the discoidal nervure of Doubleday. The object of this complicated arrangement, which has not hitherto been described, appears to be to form a strong network of corneous veins for strengthening the wing, so as to enable it to perform the strong flight which these muscles doubtless enable the insect to perform.

Modifications of the arrangement described above exist in many of the species of *Castnia*.

In the splendid new species *C. veraguana* (fore wing, Pl. XXVIII. fig. 9) the distribution is nearly similar to that of *C. cacica*; but there is no little transverse branchlet connecting *b* 3 and *b* 4, and consequently there is no closed postcostal cell, and the branch *c* 3* arises from *c* 3 in the ordinary manner at a little distance in front of the transverse base of *c* 3, making an acute angle instead of being pushed backwards a little distance, and making an obtuse angle as in *C. cacica*. The curious species *C. cochrus* (Pl. XXVIII. fig. 11) agrees with *C. veraguana* in this respect.

In *C. Boisduvallii* and other closely allied species (Pl. XXVIII. fig. 8) the small narrow postcostal cell exists; but it only emits one branch at its extremity, which branches off into *b* 3, *b* 4, and *b* 5, and the angulated base of *b* 5* arises from the posterior margin of the postcostal cell near its extremity.

In *C. icarus* (Pl. XXVIII. fig. 13) the small postcostal cell exists, emitting *b* 2 from its front margin a little beyond the middle, whilst from its extremity one branch is emitted which forks into *b* 3 and *b* 4, whilst *b* 5 arises from the extremity of the postcostal cell, close to the base of preceding branch, and *b* 5* from *b* 5 at a little distance from its base.

In *C. Hubneri* (Pl. XXVIII. fig. 14) there is no closed small postcostal cell, the little transverse veinlet between *b* 3 and *b* 4 being wanting. In Gray's figure, pl. 13. f. 2, the vein is misrepresented as closing the cell.

In *C. Latreillii* (Pl. XXVIII. fig. 15) the small postcostal cell exists, terminating in an

† *C. linus* scarcely differs from *C. cacica* in the arrangement of the veins of its fore wings (Pl. XXIX. fig. 9).

acute point from which a single branch is emitted, which forks into two branches, *b* 3 and *b* 4, *b* 5 and *b* 5* arising together from the hind margin of the cell at three fourths of its length from the base. *C. mygdon* (Pl. XXVIII. fig. 7) and *C. inca* agree with *C. Latreillii* in this respect.

Among the Helicoinoid species with elongated fore wings, forming the genus *Gazera*, Boisduval, *C. cononia* (Pl. XXIX. fig. 8) has a small postcostal cell, the 2nd branch of the postcostal vein arising shortly before its extremity; the 3rd and 4th branches arise from its extremity a little distance apart, the short transverse branchlet connecting *b* 5 with *b* 5* springs close to the emission of *b* 5 from the postcostal cell; the 5th branch arises from the postcostal cell nearly opposite the base of the 2nd branch, and appears to extend backwards to the origin of the 1st branch of the postcostal. The branches *b* 5* and *c* 3* extend backwards, forming an acute angle within the discoidal cell, and emit a branch-like fold (discoidal nervure) towards the base of the wing; *c* 3 likewise is extended backwards, uniting with this discoidal nervure, forming with it a rudimental (postdiscoidal) cell.

In *C. equadoria* (Pl. XXVIII. fig. 10) the arrangement of the postcostal branches agrees with *C. cononia*, except that the little transverse vein uniting branches *b* 5 and *b* 5* is rather nearer the base of the wing.

In *C. mimica* (Pl. XXIX. fig. 11) and *C. linus* (Pl. XXIX. fig. 9) the postdiscoidal cell is also present; but it only emits one branch at its acute extremity, which forks at some little distance beyond the cell into the two branches *b* 3 and *b* 4.

In *C. truxilla* (Pl. XXVIII. fig. 12), on the other hand, the postdiscoidal cell is not completed, there being no connexion between the branches *b* 3 and *b* 4; the relative position of the postcostal branches is otherwise identical with that of *C. linus*.

In *C. Marcel Serresi* (Pl. XXIX. fig. 2), forming the type of Boisduval's genus *Ceretes*, the small postdiscoidal cell is present, emitting the branches *b* 2, *b* 3, *b* 4, and *b* 5 from its extremity at small distances apart, and the short transverse veinlet connecting *b* 5 and *b* 5* (and closing the discoidal cell *d c*) from its hinder margin beyond the middle. The discoidal cell is traversed by a longitudital vein-like fold, the hinder portion of the cell (*d c**) forming a distinct cell by the addition of a veinlet extending backward from the basal junction of the median branches *c* 3* and *c* 3—thus leaving a narrow tract between it and the basal portion of the median vein *c*, which may be called the premedian cell, *p.m. c*.

In *C. chremes* (Pl. XXIX. fig. 4) the arrangement is nearly similar; but the vein-like fold in the discoidal cell is less strongly defined, and the little transverse vein which closes the discoidal cell does not arise from the hind margin of the postcostal cell, but is pushed forwards and arises from the 5th postcostal branch close to its base.

On comparing the figures of the wings of *C. cacica* (Pl. XXVIII. figs. 6 and 6 *a*) with those of *C. Marcel Serresi* (Pl. XXIX. figs. 2 and 3), it will be seen that the general arrangement both of the veins and cells is identical.

The arrangement of the veins of the *hind* wings has been comparatively neglected in the Lepidoptera, although Dr. Boisduval has partially, but not satisfactorily, used this character in the generic distribution of his Castniaires. In the vast majority of the

species of Lepidoptera the number of branches of the veins in the hind wings is smaller than in the fore wings; but it will suffice to examine the wings of *Hepialus humuli* (Pl. XXIX. figs. 27 & 28) to be convinced that the same elements normally exist in the hind as in the fore wings. It will be seen from the lettering of the branches, that the costal, subcostal with its six branches, median with its four branches, and anal veins are present; and even the discoidal cell is cut up into the three discoidal, subdiscoidal, and premedian divisions. This will enable us to determine satisfactorily the normal condition of the veins and branches when some of the latter are not present in the hind wings.

In *C. cacica* (Pl. XXVIII. fig. 6 *a*) the subcostal vein has only two branches, the second of which is united with the base of *c* 3* by a very thin curved fold, whilst the veinlet connecting the base of *c* 3 with that of *c* 3* extends backwards, and is continued into a discoidal nervure extending nearly to the base of the wing.

In *C. juturna* (Pl. XXIX. fig. 1) the same arrangement exists, except that the thin fold arising a little beyond the base of *b* 2 and *c* 3* is strongly angulated, and a very slight longitudinal fold extends from the angle towards the base.

In *C. cochrus* (Pl. XXVIII. fig. 11 *a*) the fold connecting the extreme base of *c* 2 and *c* 3* is almost obsolete, but is seen to spring from the discoidal vein at some distance before the origin of *c* 3*, thus leaving the discoidal cell nearly entirely open.

In *C. Hubneri* (Pl. XXVIII. fig. 14 *a*) the discoidal is fairly divided into three portions, namely, the discoidal, subdiscoidal, and premedian portions.

In *C. paradoxa* the vein or fold connecting the branches *b* 2 and *c* 3* is entirely wanting, and the true discoidal cell is wanting; but its premedian portion is present, in consequence of the branch *c* 3* being extended backwards, nearly to the base of the wing.

C. acræoides (Pl. XXIX. fig. 14) agrees with *C. paradoxa*, except that *c* 2 and *c* 3 are united together at the base beyond the cell.

In *C. linus* (Pl. XXIX. fig. 10) the almost indistinct fold connecting the base of the subcostal vein with the discoidal nervure is pushed still further back, and thus differs materially in its relation to the branches of the median and subcostal veins.

In *C. mimica* the arrangement is the same as in *C. linus*, except that the transverse fold closing the cell is obsolete, being only indicated by two minute tubercles at the place of its origin (Pl. XXIX. fig. 12).

In both sexes of *C. Marcel Serresi* (Pl. XXIX. fig. 3) the postcostal vein and its two branches are quite free; but *c* 3* extends backwards beyond the base of *c* 3, forking into two branches, which curve backwards to the base of the wing, thus forming a separate subdiscoidal cell, the anterior or discoidal part being open, and a very narrow premedian cell.

In the female of *C. chremes* (Pl. XXIX. fig. 5) the same arrangement takes place, but the discoidal cell itself is partially closed by a thin fold; and in the male the branches *c* 3 and *c* 3* arise close together at the extremity of the premedian cell.

I have thought it advisable to trace these veins and their branches to a normal state in order, if possible, to ascertain their significance, either as sexual, specific, subgeneric,

or generic characters. It appears to me that we have now sufficient materials before us to assume that they possess no higher than specific importance.

The palpi in *C. dædalus* are closely applied to the face, extending upwards to three fourths of the height of the eyes, with their inner margins close together; the apical joint very minute, but distinct and pointed, but not at all projecting. In *C. atymnus* they do not reach higher than half the height of the eyes, and the terminal joint is less prominent.

In *C. eudesmia* the palpi are longer, and extend as much as one fourth of their length above the top of the eyes; they are rather obliquely porrected, standing off from the face, and are more slender. In *C. decussata* they are parallel, and reach to the top of the eyes. In *C. Hubneri* they only reach to half the height of the eyes, and are much more rugosely squamose. In *C. Marcel Serresi* they are small, not reaching so high as half the height of the eyes, slender, oblique, pointed, and finely scaled. In *C. cochrus* they are small, not reaching higher than the epistome, and are thickly squamose, but not rugose. Such is also their structure in the Heliconiiform species, as well as in *C. linus* and *acræoides*.

The geographical range of the whole of the species of *Castnia* and its immediate allies extends only to Southern and Central America.

The transformations of the species of *Castnia* are of great interest, in connexion with the natural relations of the group and its position with regard to the Rhopalocerous division of the Order in which it was placed by the early systematists.

Madame Merian, in the 36th plate of her work on the insects of Surinam, gave a set of figures as representing the transformations of *Castnia licas*. The caterpillar is evidently that of one of the larger Morphideous Butterflies; and the pupa is a chrysalis fastened by its tail to the plant, with its head downwards, resting on the leaf, but without any indication of a central girth of silk round the body. Dr. Klug was fortunate, however, to obtain a pupa of *C. therapon* from the bulb of a *Catasetum*, sent from Central America to the Royal Gardens at Potsdam. This pupa, figured in the Appendix to his Memoir on the genus *Synemon*, agrees with those of *Sesia*, *Cossus*, *Zeuzera*, and *Hepialus*, in its elongated general form and in the transverse rows of reflexed spines with which the segments of the abdomen are furnished. It is, however, to Dr. Philippi, of Santiago, Chile, that we are indebted for a knowledge of the larva of the genus *Castnia*. In the 'Stettiner entomologische Zeitung' for 1863, p. 337, and plate iii., he has described and figured the transformations of *C. eudesmia*, the larva of which he found in the stem of *Pourretia coarctata*, one of the Bromeliaceæ. It is $4\frac{1}{2}$ inches long, and closely resembles the larva of a *Prionus* or *Cossus*, with a large prothoracic and short meso- and metathoracic segments, with six thoracic, eight ventral, and two anal feet. It is white and fleshy, with a fulvous-brown-coloured head and extremity of the body. When full-grown it forms a large cocoon of bits of leaves, twigs, and other vegetable matter, fastened together with silken threads. The pupa is dark chestnut-coloured, with the abdominal segments paler.

In the Hopeian Collection at Oxford is preserved one of these cocoons (Pl. XXVIII. fig. 4) from which I extracted a pupa of *C. eudesmia*, nearly arrived at the imago state,

so that the scaly covering of the fore wings could be easily removed or raised, showing the markings of the wings of the future moth of a diminished size (Pl. XXVIII. fig. 3).

The classification of the species of the genus *Castnia* has not hitherto been successful, owing to the imperfect examination of the minute specific details of structure of many of the species; nor can I hope to have been more fortunate than my predecessors. Dalman, who described seventeen species of the genus in his memoir in the Swedish Academy's Transactions, remarked in his introduction that *C. linus* differed from the rest in its more elongated and partially hyaline wings and abdomen, longer than the wings, adding,—"An proprium etsi propinquum genus hæ discrepantiæ indicant?" In his list of the species at the end of his paper he places *C. cronus* in a separate second section, and *C. linus* in a third, without any characters; and his description of the former of these two species is confined to its colour and markings.

Mr. G. R. Gray, in his memoir in the Entomological Society's 'Transactions,' proposed to divide the species into five sections :—

1. Those with the palpi very long, closely applied to the head, and covered with short scales. The fore wings are subtriangular, thickly covered with scales, with the exterior margin straight or slightly rounded; the lower wings beneath with one guide (or bristle working in the socket at the base of the fore wing). *C. cyparissias*, *licus*, *evalthe*, *Fonscolombei*, &c. (pl. xiii. fig. 1).

2. Those with the fore wings elongate, triangular. The hind wings are expanded, with the posterior margin somewhat truncated: *C. ardalus*, *palatinus*.

3. Those with the palpi short, reaching halfway towards the base of the antennæ, and covered with long scales; the fore wings covered with small scales, with the exterior margin rounded. The outer margin of all prominently fringed with long scales: *C. Hübneri* (pl. xiii. fig. 2).

4. Those with the wings covered with minute scales, partly diaphanous; the fore pair with the exterior margin rounded; similar also in the hind pair, with three wing-guides: *C. cochrus*, *linus*, and *acræoides*.

5. Those with the antennæ similar to the others, but the hook at the apex is formed of large scales. The head of the male is very broad, and the eyes are much larger than in the female. All the wings have the outer margin rounded, with a narrow fringe of small scales, and with four wing-guides. The sexes differ much in colour: *C. nicon* (pl. xiii. fig. 3), *thais*.

The plate accompanying the memoir of Gray gives the veining of the upper and lower wings, the clava of the antennæ, and the palpi of the 1st, 3rd, and 5th of these groups.

Mr. F. Walker, in his Catalogue of the Lepidoptera Heterocera, Part I., neglected the various excellent characters pointed out by Mr. G. R. Gray, and divided the species simply in accordance with the form of the wings, thus :—

Div. 1. Body thick.

Subdiv. 1. Fore wings slightly angular at the tips; hind wings rounded.

Sect. 1. Wings very broad. *C. dædalus*, *Latreillii*, *atymnius*, *cochrus*, &c. (16 species).

Sect. 2. Wings rather narrower; fore wings longer. *C. satrapes*, *therapon*, *ardalus* (*Brecourtii*), *invaria* (*icarus*, var.), *inca*, *palatinus*, *subvaria* (*phalaris*).

Subdiv. 2. Fore wings more distinctly angular at the tips: hind wings slightly angular. 5 species—*C. Dalmanni, hegemon, orestes, Boisduvalii,* and *amycus.*

Div. 2. Body more slender.

Subdiv. 1. Hind wings slightly angular. *C. mygdon* and *phalaris.*

Subdiv. 2. Hind wings quite rounded.

Sect 1. Fore wings rounded at the tips, moderately long. *C. actinophous* (*acræoides*), *decussata, cronis, strigata* (*Godartii*), *Hubneri.*

Sect. 2. Fore wings slightly truncated at the tips. *C. chremes, thais.*

Sect. 3. Fore wings rounded at the tips, very long; resembling the *Heliconii* in structure. *C. linus* and *acræoides.*

Div. ?. *C. Kirstenii.*

Dr. Boisduval, in his 'Species général des Lépidoptères hétérocères,' published in February 1875 (although dated 1874), has divided the *Castniæ* (Tribu des Castniaires) into the following genera:—

1. Castnia (including 53 species, without any attempt at subdivision). Characterized by the "Palpes divergents de trois articles écailleux, montant à peine au niveau du front, le dernier article petit et conique" (as shown in Gray's figures 1 *b*, 1 *c*, 1 *d*). The "antennes en massue, cylindriques, terminées par une très-petite houppe soyeuse" (as in Gray's figure 1 *a*), the "pattes—avec les jambes munies de deux ergots." The other characters cannot be regarded as generic.

2. Ceretes (n. g., including *C. chremes, thais,* and *Fabricii* (*Marcel Serresi*) = Gray's 5th group and Walker's Div. 2, Subdiv. 2, Sect. 2, characterized by the "tête petite" (overlooking the difference of the size of the head in the two sexes). Antennæ with a "longue massue fusiforme se terminant en pointe" (contrary to Gray's description), "palpes très-velus appliqués fortement sur le front, non divergents, à articles indistincts." Fore wings with the "sommet un peu pointu," and hind wings with the "deux nervures médianes très-rapprochées et coudées en sens inverse, mais ne se joignant pas pour former une cellule fermée." This last character is evidently taken from Gray's fig. 3, and answers to the hind wing of *C. Marcel Serresi,* but not to that of *C. chremes,* in which the cellule is *pro tanto* "fermée" by the fold, as shown in my figure. The fact that Dr. Boisduval excludes *C. diva,* Butler (*tricolor,* Felder) from this genus, and unites it (p. 531) with *Castnia,* notwithstanding its extremely close affinity with *C. chremes,* is a sufficient proof of the unsatisfactory character of the genus.

3. Orthia, n. g., having the head small, the antennæ "en massue fusiforme, terminée par une petite pointe, palpes très-velus, très-courts, à articles indistincts. Ailes allongées, assez étroites, les inférieures ayant près de la base une petite cellule elliptique fermée."

This genus is divided into two uncharacterized sections:—

† 1. *C. therapon,* Koll. (*paradoxa,* Bdv.).
2. *C. acræoides,* Bdv.

†† 3. *C. pelasgus*, Fab.
4. *C. unifasciata*, Felder (Voy. Novara).
5. *O. augias*, Bdv. (Herr.-Sch.).
6. *O. nexa*, n. sp., regarded as the probable female of *O. augias*.

The genus *Orthia*, as constructed by Dr. Boisduval, is quite untenable. *C. therapon* and *acræoides* have long fore wings, with a small front costal cell, the discoidal cell closed as above described; whilst the hind wings have the discoidal cell open; that is, there is no junction between the branches *b* 2 and *c* 3*, the small cell near the base of the wing noticed by Boisduval being the cell which I have termed premedian. This cell, indeed, exists in *C. pelasgus*, the first of Boisduval's second section of *Orthia*; but the fore wings have no postcostal cell, the second and third postcostal branches arising from a single base; and the 4th, 5th, and 6th branches also arising from a single basal portion of the vein; the discoidal cell itself is quite open, there being no connexion between the branches *b* 5* and *c* 3*. The very broadly triangular wings of *C. pelasgus* will also remove it from the two preceding, and indeed from *O. augias*, which possesses a small postcostal cell, a closed discoidal cell, and a closed discoidal cell in the hind wings. I do not hesitate therefore to reject the genus *Orthia*.

4. GAZERA, n. g., characterized by the "Antennes en massue allongée, terminées par une petite houppe soyeuse à peine visible. Palpes courts arrivant à peine au milieu du front, de trois articles, le troisième très-distinct, nu et pointu. Tête assez petite. Ailes allongées Héliconiformes, à écailles moins grossières que dans les *Castnia* proprement dites; les inférieures ayant la cellule discoïdale étroite fermée en angle aigu. Abdomen un peu plus long que les ailes inférieures." Containing

1. *C. linus*, F.
2. *C. heliconioides*, Bdv.
3. *C. personata*, Web.
4. *C. columbina*, Bdv.
5. *C. zagræa*, Feld.
6. *C. simulans*, Bdv.

The elongate ovate form of the fore wings of the species of this group (to which, however, *C. therapon* and *acræoides* must be added) is scarcely sufficient to separate them generically (seeing the variable form of the wings in the other species) from the rest. The other characters proposed by Boisduval are too variable in the different species to possess generic value.

Finding it impracticable to carry out a distribution of the species of *Castnia* founded on the form of the wings, as partially proposed by Mr. Walker, and rejecting Boisduval's genera for the reasons given above, I prefer to regard the species as constituting a single genus, and shall content myself by dividing them into two sections:—1st. Those with the fore wings more or less broad and triangular. 2nd. Those with the fore wings more or less elongate-ovate, the latter nearly corresponding with Boisduval's genus *Gazera*.

Genus I. CASTNIA.

Sect. I. *Species with the fore wings more or less broad and triangular.*

1. CASTNIA DÆDALUS. *C.* alis fuscis metallico nitentibus, anticis fascia media angusta, obliqua lateribus parallelis fere ad angulum internum extensa alteraque subapicali

magis irregulari e lunulis connexis, albis; alis posticis fuscis extus nigricantibus, fasciis duabus macularum parvarum albidarum (margine externo parallelis), interna interdum minus distincta. Long. corp. unc. $2\frac{1}{3}$. Expans. alar. ant. unc. 6–$7\frac{3}{4}$.

Papilio dædalus, Cram. i. pl. i. f. 1, A, B; Dalm. Monogr. Castn. p. 7, 1 (*Castn. dæd.*); Act. Holm. 1824, p. 398; Walker, List Lep. Het. B. M. i. p. 16; Boisduval, H. n. Lép. Hét. p. 499.

P. cyparissias, Fabricius, Gen. Ins. Mant. 257; Ent. Syst. iii. i. p. 30; Herbst, pl. 118. f. 1, 2; Shaw's Nat. Miscell. pl. 574, p. 142 (*Castnia, c.*); Godart, Enc. Méth. ix. 797, Ins. pl. 12. f. 1 (*Castnia cyp.*); Gray, Trans. Ent. Soc. ii. 142.

Hab. Cayenne, Amazonia. In Mus. Hopeiano Oxoniæ, et Boisduval.

2. Castnia geron. *C.* alis fusco-griseis, certo situ violaceo viridique nitentibus, superioribus supra fasciis duabus albis, subtus medio pilis longis barbatis; inferioribus supra basi discoque barbatis, margine postico flavido maculatis, subtus dense squamosis, duplici serie e maculis albis obsoletis. Exp. alar. antic. unc. 5 lin. 4 (14 centim.).

Castnia geron, Kollar, Lep. Bras. Ann. Wien, i. 217, pl. 13. f. 1; Walker, List Lep. Het. B. M. i. p. 20; Boisduv. H. n. Lép. Hét. p. 496.

Hab. Brasilia. In Mus. Vindobon.

3. Castnia veraguana (Pl. XXX. fig. 1). *C.* thorace alisque anticis castaneo-brunneis his basi cæruleo viridique nitentibus, in medio fascia lata valde angulata, antice albida, postice brunnescente, punctisque nonnullis ovalibus versus apicem albidis; alis posticis chalybeo-nigris, fascia pone medium (e maculis ovalibus composita) margineque postico aurantiaco-rufis, abdomine nigro. Long. corp. unc. $2\frac{1}{4}$. Exp. alar. antic. unc. 6 lin. 7.

Hab. Veragua (*Salvin*). In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This very fine new species is allied to *C. cacica*, Bdv., H.-Sch., but has the fore wings rather less triangular, and they do not possess the small oblong cell seen in other species, formed by the connexion of the second and third branches of the subcostal vein by a small transverse veinlet (see Pl. XXVIII. fig. 9).

4. Castnia Schreibersii. *C.* alis anticis olivaceo-fuscis, medio multo pallidioribus et luteo-albidis, fascia obliqua intus attenuata e costa, ante medium, ad medium disci extensa, ubi attingit maculam magnam rotundam brunneam parum distinctam et ad apicem alæ extensam, angulo apicali interno in maculam alteram maximam intus dilatatam brunneam; alis posticis nigris, vitta longitudinali pone medium disci antice dilatata, guttisque nonnullis (3–5) submarginalibus pallide cæruleis. Long. corp. unc. 2–$2\frac{1}{4}$. Expans. alar. antic. unc. $5\frac{1}{2}$ (14·15 centim.).

Castnia Schreibersii, Mikan, Delect. Floræ et Faun. Brasiliensis (1820); Boisduval, H. n. Lép. Hétér. p. 500.

C. Latreillii, Godart, Enc. Méth. ix. 797; G. R. Gray, Trans. Ent. Soc. L. ii. p. 142; Walker, List Lep. Het. B. M. pt. i. p. 17; Perty, Del. An. Art. Brasil. pl. 30. f. 7; Schaufuss, 'Nunq. Otiosus,' p. 8.

C. actor, Dalman, Monogr. p. 8, pl. 1. f. 1; Act. Holm. 1824, p. 398, pl. 1. fig. 1.
Eupalamides ctesiphon, Hübner, Exot. Schm. ii.

Obs. Variat præsertim mas vitta, vel guttis cæruleis alarum posticarum interdum obsoletis, ut in figura Dalmanni. Talia vidi in Mus. Parisiensi cum nomine *C. Godartii* inscripta (nec *C. Godartii*, Ménétriés = *C. strigata*).

Hab. Brasilia, Rio Janeiro, Minas, Pernambuco. In Mus. Britann., Hopeiano Oxoniæ, et Boisduval.

5. Castnia cacica. *C.* alis supra nigro-fuscis, ciliis albis; anticis striga tenui albida fere recta margini postico fere parallela, punctoque parvo in medio disci interdum obsoleto: alis posticis fascia denticulata paullo pone medium, ad angulum analem dilatata, maculisque quinque rotundis submarginalibus aurantiacis (♂) vel rufis (♀). Variat interdum guttis duabus parvis pallidis inter fasciam et marginem externum alarum anticarum. Long. corp. unc. 2. Expans. alar. ant. unc. $5\frac{3}{4}$.

Castnia cacica (Boisduval, MS.), H.-Schäffer, Aussereur. Schm. i. f. 143; Boisduval, H. n. Lép. Hétér. p. 502; Walker, Cat. Lep. Het. B. M. p. 1580.
Mas? *C. procera*, Boisduval.

Obs. An excellent figure of this fine species is contained in Jones's unpublished 'Icones,' *Danai*, pl. 63, from the collection of Mr. Francillon, but without indication of locality or name.

Hab. Ad ripas fluv. Magdalenæ, Colombia, Polochic Valley (*Salvin*), Bogota; Nicaragua (*Belt*). In Mus. Hopeiano Oxoniæ, et Boisduval.

6. Castnia procera. "D'un noir brun à reflet verdâtre. Les ailes supérieures, dont la frange est blanche, sont traversées, sur leurs tiers postérieur, par une raie blanche droite, régulière, ne touchant pas tout-à-fait la côte. Ailes inférieures offrent un peu au-delà du milieu une bande transverse, assez étroite, rouge, un peu crénelée, et dilatée à l'angle anal; entre cette bande et l'extrémité il y a, en outre, une série de quatre gros points de la même couleur. Diffère de la *cacica* par ses ailes supérieures un peu plus pointues au sommet, par l'absence de la petite tache blanche discoïdale, par ses ailes inférieures dont la bande transversale est moitié plus étroite, et enfin par le dessous des ailes, qui est entièrement d'un brun uniforme, ainsi que le corps. Le même port et la même taille que la *cacica*." (Exp. 13 centim.)

Castnia procera, Boisduval, H. n. Lép. Hétér. p. 503.

Hab. Guatemala. In Mus. Boisduval.

7. Castnia pylades. *C.* alis nigro-fuscis metallico nitentibus, anticis fascia lata fusco-lutea media oblique ad angulum internum apicalem extensa, marginibus irregularibus fuscoque irrorata alteraque abbreviata ejusdem coloris subapicali irregulari, strigaque nigra undulata apicali; alis posticis fuscis, fascia subapicali utrinque dentata rufo-fulva, nigro maculata maculis versus angulum analem plus minusve confluentibus. Fœmina differt alis anticis inter basin et medium fascia indistincta subalbida. Long. corp. unc. $1\frac{3}{4}$–2. Exp. alar. antic. unc. $4\frac{3}{4}$–$5\frac{3}{4}$–$6\frac{1}{2}$.

Papilio pylades, Cram. pl. 397. f. A, B; Herbst, Icon. pl. 135. f. 1, 2; Shaw, Nat. Miscell. pl. 895; Godart, Enc. Méth. ix. 797 (*Castnia p.*); Dalm. Ins. pl. 12. f. 2; Monogr. p. 9; Act. Holm. 1824, p. 399; Gray, Trans. Ent. Soc. L. ii. p. 142; Walker, List Lep. Het. B. M. i. p. 17; Boisduval, H. n. Lép. Hétér. p. 501.

Hab. Cayenne, Para. In Mus. Britann., Hopeiano Oxoniæ, et Boisduval.

8. Castnia zerynthia. *C.* alis anticis olivaceo-fuscis medio pallidioribus lutescentibus basi et apice magis nigricantibus, macula magna cuneata obliqua nigricante e costa ad medium alæ extensa albo marginata vittaque nigricante e medio fere ad basin marginis interni, maculaque magna trigona costali inter medium et apicem albo biguttata; alis posticis, basi fuscis, medio cum abdomine albis, limbo lato nigro, fulvo guttato. Long. corp. unc. $2\frac{1}{4}$. Expans. alar. ant. unc. $5\frac{1}{2}$ (14 centim.).

Castnia zerynthia, G. R. Gray, Trans. Ent. Soc. Lond. ii. p. 144; Walker, List Lep. Het. B.M. i. p. 18; Boisduval, H. n. Lép. Hét. p. 506.

C. Langsdorfii, Ménétriés, Enum. Corp. An. Mus. Petrop. pl. xi. f. 1.

Hab. Brasilia, Bolivia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

9. Castnia icarus. *C.* alis anticis fuscis margine interno late griseo, fasciis duabus parallelis albis obliquis e costa fere ad angulum internum extensis, punctisque nonnullis interdum fasciam parvam simulantibus versus apicem; alis posticis læte rubris basi griseis, strigis duabus undulatis pone medium margineque externo nigris maculisque nonnullis prope medium costæ albis et nigris. Long. corp. maris unc. $1\frac{1}{6}$, fœm. unc. $1\frac{5}{6}$. Expans. alar. antic. maris unc. $3\frac{1}{4}$, fœm. unc. $4\frac{1}{2}$–5 (10–12 centim.).

Papilio icarus, Cram. i. pl. 18. f. A, B; Shaw's Misc. pl. 672; Godart. Enc. Méth. ix. p. 798; Ins. pl. 12. f. 3 (*Castnia ic.*); Dalman, Monogr. p. 10; Act. Holm. 1824, p. 399; Gray, Trans. Ent. Soc. L. ii. p. 144; Boisduval, Consp. Lep. Guatemala, p. 75; H. n. Lép. Hétéroc. p. 503; Walker, List Lep. Het. B. M. i. p. 19; Hübner, Samml. exot. Schmett. i. (*Urbanus celebris ic.*).

Hab. Cayenne, Brasilia, Guatemala, Maranham. In Mus. Britann., Hopeiano Oxoniæ, et Boisduval.

Var. (*C. invaria*) alis posticis maculis discoidalibus fere obliteratis. "Fusca, corpus subtus et abdomen testacea: alæ cyaneo viridique nitentes; anticæ fasciis tribus hyalinis [albis]; posticæ rufæ basi albidæ, fascia antica [sc. versus costam] maculari hyalina [alba], fascia breviore margineque postico nigris, hoc maculis 2 vel 3 rufis." Expans. alar. ant. unc. $4\frac{1}{4}$.

Castnia invaria, Walker, List Lep. Het. B. M. i. p. 23; Boisduval, H. n. Lép. Hét. p. 530.

Hab. Brasilia. In Mus. Britann.

10. Castnia papagaya (Pl. XXX. fig. 6). Corpore crasso fulvo-fuscescente, abdominis lateribus magis rufis; alis anticis ovali-trigonis, in medio saturate fulvescentibus, basi et margine apicali obscurioribus maculaque media costali fusca bipartita, medio pallidiore, fasciaque obliqua irregulari fusca inter medium alæ et apicem, ad costam et marginem internum dilatata, in medio angustata et ibi subobliterata, maculam parvam albam prope costam includente; alis posticis rotundatis chalybeo-

nigris, fasciis tribus transversis e maculis ovalibus compositis, rubris, fimbriaque lutescente; antennis rufescentibus; alis subtus rufis, anticis nigro variis. Long. corp. unc. $1\frac{2}{3}$. Expans. alar. antic. unc. $3\frac{3}{4}$.

Hab. Papagaya (*Rogers*). In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This species is remarkable for its large robust body and short strong wings.

11. Castnia Dalmannii (Pl. XXX. fig. 5). *C.* alis ferrugineis, maris fasciis duabus obsoletis, fœminæ fascia alba angusta et punctis hyalinis duobus; posticis rubris, basi strigis maculisque juxta marginem nigris, maris disco flavo et fœminæ albo. Expans. alar. antic. maris unc. $3\frac{1}{2}$, fœm. unc. 4.

Castnia Dalmannii, Gray, Trans. Ent. Soc. L. ii. 145; Walker, List Lep. Het. B. M. i. p. 26; nec Boisduval, H. n. Lép. Hét. p. 512, which = *C. hegemon*.

Fœm. *C. Grayi*, Boisduval, H. n. Lép. Hét. p. 498.

Hab. Brasilia. In Mus. Britann., Boisduval.

Dr. Boisduval's description of the wings of the insect to which he has applied the name of *C. Grayi*, will be seen from my figure (Tab. XXX. f. 5) and Gray's description to agree entirely with that of the female of *C. Dalmannii*, whilst the description of his *C. Dalmannii* as completely agrees with *C. hegemon*. His description of *C. Grayi* is as follows:—"Ailes supérieures d'un brun un peu ferrugineux, à reflet verdâtre; elles ont entre le milieu et le sommet une raie oblique d'un blanc pur, allant de la côte au bord interne, précédée en dehors d'un petit point de sa couleur: ailes inférieures d'un brun olivâtre à la base, marquées au milieu d'une large tache blanche transversale, atteignant le bord abdominal; ensuite le contour est rouge, divisé en arrière par un cordon de taches noires assez grosses et bien marquées. Un peu plus grande que l'*Iapyx*."

Hab. Brasilia. In Mus. Boisduval.

12. Castnia Pallasia. *C.* alis anticis olivaceo-fuscis, fascia valde sinuata et irregulari, grisea, e costa (ultra medium), tunc dilatata subbifida et inde versus basin marginis interni extensa, maculaque magna fere rotundata ejusdem coloris versus angulum posticum internum, liturisque duabus arcuatis subapicalibus albis; alis posticis nigris fascia lata fere media alba seu flavescente, striga rubra maculari pone medium (in limbo late nigro) guttisque submarginalibus albidis. Long. corp. maris unc. $1\frac{1}{6}$, fœm. unc. $1\frac{1}{2}$. Expans. alar. antic. maris unc. $3\frac{1}{6}$, fœm. unc. 4 (9–12 centim.).

Var. *a* alis anticis magis nigricantibus, posticis fascia alba venis nigris gracilibus divisa.

Castnia Pallasia, Eschscholtz, in Kotzebue, Reise, iii. p. 217, pl. 6. f. 27; Thon, Archiv, ii. pl. 1. f. 5; Boisduval, H. n. Lép. Hét. p. 507.

C. ardalus, Dalman, Monogr. p. 17; Act. Holm. 1824, p. 403; Gray, Trans. Ent. Soc. L. ii. p. 147; Walker, List Lep. Het. B. M. i. p. 24.

C. Brecourti, Godart, Enc. Méth. ix. p. 798; Gray, Trans. Ent. Soc. L. ii. 147.

Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ (*Burchell*, 29 Dec. 1825, Catombí, Brazil), Boisduval.

Var. β. Mas e Papagaya fasciis variis alarum minus dilatatis.

13. Castnia galinthias. *C.* alis anticis acuminatis, fuscis, nitidis, lineolis longitudinalibus albis et nigris alternis (in interstitiis venarum); alis posticis nigris, fascia media (venis divisa) seriebus duabus macularum plus minusve distinctarum albis, margine postico obscure fulvo. Long. corp. fœm. unc. $1\frac{1}{2}$. Expans. alar. antic. unc. $3\frac{1}{2}$.

Castnia galinthias, Hopffer, Neue Schmett. tab. iv. f. 4; Boisduval, H. n. Lép. Hét. p. 412.

Hab. Brasilia, Novo Friborgo. In Mus. Hopeiano Oxoniæ et Berol.

14. Castnia harmodius. *C.* alis fusco-nigricantibus metallico tinctis, anticis fimbria alba, fascia media obliqua postice attenuata e costa ad angulum internum extensa, altera sinuata subapicali minore e maculis quinque formata; alis posticis fascia intermarginali maculari rufa, ad angulum analem dilatata et striga obliqua nigra divisa. Long. corp. unc. $1\frac{1}{4}$. Expans. alar. antic. unc. $3\frac{1}{6}$–4–$4\frac{1}{2}$.

Obs. Striga parva obliqua fasciam rubram submarginalem alæ posticæ in duas partes dividens interdum obliterata est, inde fascia integra evadit.

Papilio harmodius, Cramer, iii. pl. 223. f. C, D; Dalman, Monogr. Act. Holm. 1824, p. 399 (*Castnia h.*); Gray, Trans. Ent. Soc. L. ii. p. 143; Walker, Cat. Lep. Het. B. M. i. p. 21; Boisduval, H. n. Lép. Hét. p. 525.

P. syphax, Fabricius, Syst. Ent. p. 48; Ent. Syst. iii. 1, p. 45; Herbst, Ins. vi. p. 73, pl. 134. f. 1, 2; Jones, Icones, iii. pl. 74. f. 1.

P. pirrha, Oliv. Enc. Méth. Ins. pl. 16. f. 2.

Castnia licas, var., Godart, Enc. Méth. x. p. 797.

Hab. Cayenne, Maranham, Amazonia, Surinam, Para, Demerara. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

15. Castnia atymnius. *C.* alis anticis nigro-fuscis metallico nitidis, fascia media albida obliqua fere recta ad angulum analem extensa alteraque subapicali valde sinuata e maculis 5 vel 6 formata (interdum obliteratis); alis posticis fuscis extus plus minusve brunneis, fascia magna alba obliqua media versus costam attenuata, et ad angulum analem valde dilatata, fimbria partim alba; antennis apice fulvis. Long. corp. unc. $1\frac{1}{3}$–$1\frac{1}{2}$. Expans. alar. antic. unc. $3\frac{1}{2}$–$3\frac{2}{3}$.

Var. *α* maculis subapicalibus albis in alis anticis valde distinctis. (Colombia, Nicaragua, Bogota.)

Var. *β* fascia media alarum anticarum alba distincta, fascia maculari subapicali fere obliterata squamis nonnullis pallidioribus tantum distinguenda, vel omnino obliterata (ut in figura Pertii), alis posticis brunneis albo fasciatis. (Colombia, St. Estavan, Venezuela.)

Var. *γ* fascia media et fascia subapicali alarum anticarum fere obsoletis. (Nicaragua, Santa Martha, Guatemala, Mexico.)

Castnia atymnius, Dalman, Monogr. p. 12; Act. Holm. 1824, p. 400; Gray, Trans. Ent. Sec. L. ii. 142; Walker, List Lep. Het. B. M. i. p. 17 (*C. atymnus*); Boisduval, Cons. Lepid. p. 75; H. n. Lép. Hét. p. 528.

C. spixii, Perty, Del. An. Art. Bras. pl. 31. f. 3.

Obs. *C. futilis*, Walker (List Lep. Brit. M. pt. vii. 1856, p. 1581), from Nicaragua, is described from two old faded and rubbed specimens of this species in the British Museum.

Hab. Brasilia, Guatemala, Nicaragua, Honduras, Venezuela, Columbia, Bogota. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

16. CASTNIA LICUS. *C.* alis fusco-nigris metallico nitidis, anticis fascia media recta postice attenuata ad angulum internum extensa, alteraque subapicali sinuata maculari; alis posticis fascia magna alba obliqua, versus costam attenuata, ad angulum analem valde dilatata, serieque marginali macularum rubrarum. Long. corp. unc. $1\frac{1}{4}$–$1\frac{1}{2}$. Expans. alar. unc. $3\frac{1}{2}$–4 (7–11 centim.).

Var. *α* fascia maculari subapicali alarum anticarum fere obliterata.

Var. *β* alis anticis lutescentibus, basi, apice, marginibus fasciæ mediæ nigris, maculis alarum posticarum pallide fulvis.

Papilio licus, Fabricius, Ent. Syst. iii. 1, p. 47; Herbst, Ins. pl. 134. f. 3, 4; Drury, Ins. i. pl. 16. f. 1, 2; Merian, Ins. Surinam. pl. 36; Oliv. Enc. Méth. Ins. pl. 12. f. 4; Jones, Icones, iii. pl. 73. f. 3, 4; Godart, Enc. Méth. ix. p. 797 (*Castnia licus*); Cramer, iii. pl. 223. f. A, B; Dalman, Monogr. p. 13; Act. Holm. 1824, (*Castnia licus*); Gray, Trans. Ent. Soc. L. ii. p. 143; Walker, List Lep. Het. B. M. i. p. 18; Cuvier, Règne An. ed. Crochard, Ins. pl. 145. f. 1, 2; Boisduval, H. n. Lép. Hét. p. 526; Chenu, Ency. Pap. 235. f. 402.

Obs. I am inclined to believe that this supposed species is formed of individuals of *C. atymnius*, the chief difference consisting in the submarginal rows of red spots on the hind wings, which, indeed, vary both in number and size in the specimens in the Oxford Museum. Several faded specimens in the Hopeian Collection, marked *C. futilis* by Mr. Walker, only differ from similar faded specimens of *C. atymnius* (also labelled *C. futilis* by Mr. Walker) in having a few slight orange marks near the angle of the hind wings.

Var. *α* alis posticis fascia brevi alba e disco ad angulum internum extensa margine aurantiaco (*Walker, op. cit.* vii. p. 1582).

Hab. America meridionalis, Ecuador, Trinidad, Cayenne, Surinam, Demerara, Para, Brazil, Ega (Amazonia); mouth of river Una, near Para, 19 Jan. 1830 (*Burchell*); Upper Orinoco (larva in *Orchidearum* radicibus). In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

17. CASTNIA BOISDUVALII. Mas *C.* alis anticis purpureo-fuscis metallico nitidis, basi, macula trigona media costali, altera magna trigona inter medium costæ et apicem (guttas tres pellucidas gerente), his maculis intus cum altera magna trigona (e medio marginis interni ad angulum externum extensa) connexis; alis posticis basi nigris, in medio macula magna aurantiaco-rufa marginis antici, in strigam tenuem ad marginem analem extensa, limbo late nigro, rufo plus minusve maculato, maculis duplici serie congestis. Long. corp. unc. $1\frac{1}{4}$. Exp. alar. antic. unc. $2\frac{1}{3}$–4.

Fœmina differt abdomine albo, macula postica alarum anticarum extus griseo-suffusa, alisque posticis fascia media lata ad marginem analem extensa maculisque marginalibus omnibus flavidis.

Castnia Boisduvalii, Becker, MS.; Walker, List Lep. Het. B. M. i. p. 27; Schaufuss, Nunq. Otiosus, p. 9; Boisduval, H. n. Lép. Hét. p. 510.

♂. *C. Besckei,* Ménétriés, Enum. Anim. Mus. Petrop. ii. pl. xi. f. 3.
♀. *C. Herrickii,* Boisduval, MS.; Herr.-Schäffer, Samml. aussereur. Schmett. fig. 144; Walker, List Lep. Het. B. M. p. 1581.

Hab. Brasilia, Bahia, Pernambuco, Papagaya, Parana, Bolivia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

18. Castnia orestes. *C.* alis anticis plus minusve pallide luteo-fuscis, basi, fascia e medio costæ fere ad angulum internum extensa (ramum curvatum intus pone medium disci emittente), macula magna irregulari trigona subapicali (guttas tres indistinctas hyalinas gerente) margineque apicali obscurioribus; alis posticis basi griseis, medio macula magna triangulari, e margine anali fere ad costam extensa, alba, limbo lato nigro fasciis duabus irregularibus e maculis aurantiacis plus minusve distinctis compositis notato. Long. corp. unc. 1–1$\frac{1}{2}$. Expans. alar. 2$\frac{1}{2}$–3$\frac{3}{4}$.

Castnia orestes, Boisd. H. n. Lép. Hét. p. 509.
C. umbrata, Ménétriés, Enum. An. Mus. Petrop. pl. xi. f. 2; Walker, List Lep. Het. B. M. i. p. 26.

Hab. Brasilia, Rio Janeiro, Venezuela. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

19. Castnia inca. *C.* alis anticis fusco, luteo et brunneo variegatis, maculis duabus pallidioribus costalibus, una media subtrigona, altera semirotundata inter primam et guttas tres hyalinas subapicales, hujus maculæ margo posticus niger obliquus, et cum striga tenui obliqua prope basin marginis interni retro extensa continuus; alis posticis basi fuscis; medio fulvo-rufis, ultra medium nigris, fascia maculari albida submarginali. Long. corp. unc. 1$\frac{1}{3}$. Expans. alar. antic. unc. 3$\frac{3}{4}$–4$\frac{1}{3}$ (9–10 centim.).
Var. *a* alis posticis serie macularum parvarum rotundarum parum distincta, inter fasciam fulvam et maculas submarginales.

Castnia inca (Boisduval, MS.), Herr.-Schäffer, Samml. aussereur. Schm. f. 488, 489; Walker, List Lep. Het. B. M. i. p. 24; Hopffer, Neue Schmett. Heft ii. pl. 4. f. 2; Boisduval, H. n. Léep. Hét. p. 524.

Hab. Mexico prope Oajaca, Honduras, Venezuela. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

20. Castnia hecate. *C.* alis fuscis olivaceo nitidis, fascia ocellari (margini postico fere parallela) postice dilatata strigaque obliqua alba e medio costæ ad medium disci extensa, ubi fasciæ ocellari se conjungit; alis posticis rufo-fulvis, fascia pone medium limboque tenui marginali nigris. Long. corp. unc. 1$\frac{1}{4}$–1$\frac{3}{4}$. Expans. alar. antic. unc. 3$\frac{1}{6}$–4$\frac{1}{6}$ (8 centim.).

Castnia hecate (Boisduval, MS.), Herrich-Schäffer, Samml. aussereur. Schmett. f. 439; Boisduval, H. n. Lép. Hét. p. 531; Walker, List Lep. Het. B. M. p. 1581.

Hab. America meridionalis, insula Haiti. In Mus. Hopeiano Oxoniæ et Boisduval.

21. Castnia strigata. *C.* alis fuscis, metallico nitentibus, albo variis, scil. strigis duabus longitudinalibus basalibus, fascia submedia, valde angulata et in medio interrupta, dimidio antico integro, postico e maculis 4 subovalibus formato; inter hanc fasciam

et apicem striga obliqua e maculis 3–4 formata serieque subapicali macularum, in medio interrupta et versus apicem interdum fere obliterata; alis posticis nebula media costali fulvescente, fascia maculari pone medium alteraque submarginali e maculis minoribus formata albis. Long. corp. unc. 1. Expans. al. ant. unc. $2\frac{1}{2}$ ($6–6\frac{1}{2}$ centim.).

Castnia strigata, Walker, List Lep. Het. B. M. i. p. 30; Boisduval, H. n. Lép. Hét. p. 519.
C. Godartii, Ménétriés, Enum. Corp. Anim. Mus. Petrop. pl. 11. fig. 4, p. 130.

Hab. Brasilia, Pernambuco. In Mus. Britann., Hopeiano Oxoniæ, et Boisduval.

22. CASTNIA DECUSSATA. *C.* alis fuscis viridi nitentibus, fascia angulata (literam magnam V supinam simulante) alteraque valde sinuata e maculis 5 composita subapicali, maculis alteris duabus versus angulum internum positis albis; alis posticis fascia irregulari pone medium, e maculis 5–7 oblongis composita, strigisque nonnullis fere obsoletis marginalibus prope angulum analem. Long. corp. unc. $1\frac{1}{6}$. Expans. alar. ant. unc. 2–3 ($6–6\frac{1}{2}$ centim.).

Castnia decussata, Godart, Enc. Méth. ix. 799; Gray, Trans. Ent. Soc. Lond. ii. p. 146; Walker, List Lep. Het. B. M. i. p. 29; Hübner, Zuträge, iii. f. 639, 640; Boisduval, H. n. Lép. Hét. p. 519.

A figure of this species is contained in Jones's 'Icones,' pl. 89. f. 1, without any reference or locality.

Var. *a* alis magis maculatis, = *C. melaleuca*, Boisduval, MS. in Mus. Parisiensi.
Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ, et Boisduval.

23. CASTNIA PAPILIONARIS. (Tab. XXXI. fig. 3.) Alis anticis obscure fuscis metallico nitidis, puncto parvo ad apicem cellulæ discoidalis, fasciaque tenui recta inter medium et apicem alæ pallide flavis, fimbria alba; alis posticis nigris, fascia pone medium, versus angulum ani attenuata, cærulescente. Long. corp. unc. $1\frac{3}{4}$. Exp. alar. antic. unc. 4.

Castnia papilionaris, Walker, List Lep. Het. B. M. part xxxi. p. 42; Boisduval, H. n. Lép. Hét. p. 500.

Obs. The ochraceous colour of the body described by Mr. Walker is simply the result of the rubbed condition of the specimen in the British Museum.
Hab. Bogota. In Mus. Britann., et Hopeiano Oxoniæ.

24. CASTNIA SATRAPES. (Tab. XXXI. fig. 4.) Alis anticis viridi-fuscis, macula magna marginis interni (guttam fuscam arcuatam includente) fasciaque lata subapicali albidis fusco irroratis, squamisque nonnullis subapicalibus albis; alis posticis aurantiacis, venis radiantibus limboque nigris, hoc albido maculato. Long. corp. unc. 1 lin. 5. Exp. alar. antic. unc. 4 lin. 2 ($7\frac{1}{2}$ centim.).

Var. *a* maculis pallidis alarum anticarum intus connexis, ut in figura Kollari.
Var. *β* maculis pallidis alarum anticarum separatis, alis posticis aurantiacis nigro limbatis.
Var. *γ* maculis pallidis alarum anticarum separatis, alis posticis flavidis nigro limbatis, limbo serie macularum rubrarum intus notato. (Tab. XXXI. fig. 5.)

Castnia satrapes, Kollar, Lep. Bras. Ann. Wien. Mus. ii. 216, pl. 12. f. 3; Walker, List Lep. Het. B. M. i. p. 33; Boisduval, H. n. Lép. Hét. p. 533.

Hab. Brasilia. In Mus. Hopeiano Oxoniæ et Boisduval.

25. CASTNIA PALATINA. *C.* alis anticis rufo-brunneis medio pallidioribus, macula magna subovali e medio costæ versus medium disci oblique extensa, gutta parva hyalina subapicali alis posticis basi fuscis, medio flavidis versus costam aurantiacis, limbo nigro striga submarginali flavo-maculari. Long. corp. unc. $1\frac{1}{3}$. Expans. alar. ant. unc. $3\frac{1}{2}$ (8 centim.).

Papilio palatinus, Cramer, ii. pl. 159. f. B, C; Godart, Enc. Méth. ix. p. 799 (*Castnia palatina*); Dalman, Monog. p. 18; Act. Holm. 1824, p. 403; Gray, Trans. Ent. Soc. Lond. ii. p. 147; Walker, List. Lep. Het. B. M. i. p. 25; Boisduval, H. n. Lép. Hét. p. 513.

Hab. Cayenne, Surinam, Demerara, Para. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

26. CASTNIA THERAPON. Alis elongatis, anticis supra fulvis, striga tenui nigricante obliqua e basi marginis postici fere ad apicem ducta, macula media disci fusca versus basin vitta nigricante marginata, margine interno apiceque fuscescentibus, hoc obscure biguttato; alis posticis rufo-aurantiacis, limbo apicali nigro, hoc guttis septem albidis notato. Long. corp. lin. 13. Expans. alar. ant. unc. 3 lin. 4 ($7\frac{1}{2}$ centim.).

Castnia therapon, Kollar, Lep. Bras. Ann. Wien. Mus. ii. 218, pl. 13. f. 3; Walker, List Lep. Het. B. M. i. 23; Boisduval, H. n. Lép. Hét. p. 540 (*Orthia th.*).

C. paradoxa (Boisduval, MS.), Herr.-Schäffer, Samml. aussereur. Schmett. f. 16, 17.

Hab. Brasilia. In Mus. Hopeiano Oxoniæ et Boisduval.

27. CASTNIA CLITARCHA. (Tab. XXXI. fig. 1, 2.) Fœm. alis anticis magnis obovalibus apice subacutis, stramineo-albis, brunneo-fusco variegatis, maculis in medio e costa literam h magnam reversam valde obliquam rude simulantibus, striolaque tenui denticulata fere ex apice versus basin marginis interni extensa, apiceque ipso fuscis, hoc punctis tribus albis (intermedio multo majore) notato, limbo etiam fusco; alis posticis læte fulvis basi magis rufis, fascia rufescente inter medium et apicem alæ seriem macularum nigrarum includente limboque denticulato nigro; corpore toto fulvo thorace saturatiore, subtus pallidiore.

Mas multo minor, alis anticis saturate fulvis notulis fœminæ multo minus distinctis; alis posticis basi paullo obscurioribus, aliter ut in fœmina notatis. Long. corp. maris fere unc. $1\frac{1}{2}$, fœm. unc. $1\frac{3}{4}$. Expans. alar. antic. maris unc. $3\frac{1}{2}$, fœm. unc. 5.

This species is closely allied to *C. inca*, the figures of which hitherto published appear to represent female specimens. The female of the present species has the fore wings much more strongly variegated; and the broad black border of the hind wings in *C. inca*, with its row of pale straw-coloured spots, is replaced by a richly coloured and marked margin in *C. clitarcha*. The cell and branches of the postcostal vein of the fore wing are arranged as in *V. Latreillii*, the third and fourth branches separating at a considerable distance beyond the cell.

Hab. Panama (*Salvin*), Nicaragua (*Belt*). In Mus. Hopeiano Oxoniæ.

28. Castnia phalaris (Fab. nec Godart). (Tab. XXX. fig. 3.) *C.* alis anticis fuscis basi et margine externo obscurioribus, disco nonnihil pallidiore, fascia lata obliqua nigricante e medio costæ ultra medium disci extensa, inde in plagam magnam rotundam angulum posticum apicalem occupantem (medio pallidiorem) dilatata, maculaque magna trigona subapicali (guttas tres subhyalinas includente) obscura; alis posticis nigris limbo lato aurantiaco-fulvo, intus irregulariter undulato, striga submarginali fusca margineque ipso interdum nigro dentato. Long. corp. lin. 10–15. Expans. alar. antic. unc. $2\frac{1}{2}$–$3\frac{1}{3}$.

Papilio phalaris, Fabricius, Ent. Syst. iii. 1, p. 45; Jones, Icones, iii. pl. 75. f. 3, 4; Donovan, Naturalist's Repos. ii. pl. 47. f. 1, 2 (nec Godart, nec Boisduval,=*mygdon,* Dalm.); Dalman, Monogr. *Castnia,* p. 22; Act. Holm. 1824, p. 405; Gray, Trans. Ent. Soc. Lond. ii. 145; Walker, List Lep. Het. i. p. 19.

Castnia subvaria, Walker, *op. cit.* p. 25.

C. musarum, Boisduval, MS. in Mus. Parisiensi.

Var. *a* striga submarginali fusca alarum posticarum fere obliterata, margine ipso fulvo.

C. dionæa, Hopffer, Neue Schm. pl. 5. f. 3; Boisduval, H. n. Lép. Hét. p. 523.

Hab. Minas Geraes Brasiliæ. In Mus. Britann., Hopeiano Oxoniæ, Berolini, Boisduval.

C. phalaris was described by Fabricius from the cabinet and Icones of Mr. Jones, whose figures were published by Donovan in his 'Naturalist's Repository.' The Fabrician description is simply "alæ supra fuscæ, anticæ immaculatæ, posticæ fasciis duabus fere marginalibus e maculis exalbidis." Godart applied the description of Fabricius to the insects subsequently described and figured by Dalman under the name of *P. mygdon,* with which, indeed, the two rows of spots on the outer margin of the hind wings described by Fabricius agree both in form and colour.

29. Castnia eudesmia. *C.* alis anticis glauco-fuscis, costa tenui margineque interno late albo pulverosis, fasciisque duabus postice acuminatis e costa ultra medium disci extensis; alis posticis nigris, fasciis duabus macularibus inter medium et marginem posticum sanguineis albo irroratis, margine ipso anguloque anali griseis, hoc fulvo squamoso. Long. corp. unc. $1\frac{1}{2}$. Expans. alar. ant. unc. $3\frac{1}{2}$ (9–11 centim.).

Castnia eudesmia, Gray, Trans. Ent. Soc. L. ii. p. 145; Herrich-Schäffer, Samml. aussereur. Schm. f. 140, 141; Gay, Historia fisica de Chile, Lep. pl. 5. f. 8, p. 47; Walker, List Lep. Het. B. M. i. p. 19; Boisduval, H. n. Lép. Hét. p. 517.

Hab. Chili; Brasilia? In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

30. Castnia cochrus. *C.* alis nigris; anticis in medio subpallidioribus, venis nigris, striga obliqua tenui nigra pone medium disci versus apicem alæ extensa, vittaque subalbida postica adjecta; alis posticis nigris macula media alba transverse ovata in sex partes divisa, venis guttisque nonnullis plus minusve obsoletis versus angulum externum albis; abdominis segmentis 5 apicalibus rubris, nigro et albo marginatis. Long. corp. unc. $1\frac{1}{2}$. Expans. alar. antic. unc. 4–$4\frac{1}{2}$.

Papilio cochrus, Fabricius, Ent. Syst. iii. 1, p. 42; Donovan, Nat. Repos. pl. 156; Jones, Icones, iii. pl. 77. f. 1; Godart, Enc. Méth. ix. p. 798 (*Castnia c.*); Gray, Trans. Ent. Soc. Lond. ii. p. 147; Walker, List Lep. Het. B. M. i. p. 20; Boisduval, H. n. Lép. Hét. p. 517.

Castnia maris, Dalm. Monogr. p. 16; Act Holm. 1824, p. 401, pl. 1. f. 4.
Prometheus casmilus, Hübner, Samml. exot. Schmett. ii. f. 1, 2.
Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval, &c.

31. CASTNIA RUTILA. *C.* alis anticis testaceo-fulvis, macula obscuriore in medio costæ, intus bifida, ramis curvatis, ad venam mediam extensis, serieque irregulari punctorum obscuriorum inter medium et marginem apicalem, scil. 2 versus apicem, superiore majore nigricante guttam albam includente, 3 in medio majoribus, et 2 versus angulum internum multo minoribus, serieque marginali macularum cuneiformium obscuriorum; alis posticis testaceo-rufis, fascia submarginali e maculis 8 nigris formata, margineque ipso tenui nigro intus undulato. Exp. alar. antic. circ. unc. 5.
Castnia rutila, Felder, Reise Novara, pl. 79. f. 1; Boisduv. H. n. Lép. Hét. p. 496.
Hab. Amazonia. In Mus. Felder.

32. CASTNIA FABRICII. *C.* alis anticis luteo-fulvis ("ferrugineis"), nebulis obscurioribus fuscescentibus, scil. macula seu circulo juxta medium costæ, fasciaque lata inter medium et marginem apicalem, cum margine parallela, versus costam et marginem internum dilatata, hujus fasciæ marginibus undulatis et præsertim postice obscurioribus; alis posticis rufis ("pallide testaceis"), fasciis tribus nigris, scil. prima ante medium abbreviata, secunda mediana, tertia pone medium, his duabus crenatis, serieque submarginali macularum sex nigrarum ovalium notatis. Expans. alar. unc. $4\frac{1}{4}$ ($5\frac{1}{4}$ Gray, an recte?).
Castnia Fabricii, Swainson, Zool. Ill. iii. pl. 149; Thon, Ent. Archiv, 1829, f. 123 *b*; Gray, Trans. Ent. Soc. L. ii. p. 144; Walker, List Lep. Het. B. M. i. 19 (nec *C. Fabricii*, Godart, Enc. Méth. ix. 800, = *C. Marcel Serresi* fœm., nec *C. Fabricii*, Boisduval, H. n. Lép. Hét. p. 539, = *C. chremes*.
Hab. Brasilia ("diamond district").

33. CASTNIA JAPYX. *C.* alis rufo-brunneis, fascia obliqua pone medium obscuriore, in mare macula parva pallidiore ad apicem cellulæ discoidalis punctoque hyalino inter cellulam et marginem externum, in fœmina maculis 5 rotundis inter se distantibus discoidalibus flavescentibus; alis posticis fulvis extus magis testaceis, basi fuscescentibus, in fœmina fasciis duabus submarginalibus e maculis parvis nigricantibus formatis, his maculis in maribus fere obliteratis (nonnullis versus angulum externum tantum apparentibus). Long. corp. unc. $1\frac{1}{6}$–$1\frac{5}{6}$. Expans. alar. ♂ unc. $3\frac{1}{4}$ (10 centim.), ♀ unc. $4\frac{1}{2}$ ($11\frac{1}{2}$).
Athis japyx, Hübner, Samml. exot. Schmetterl. ii. 362, f. 1, 2, ♂; Boisduval, H. n. Lép. Hét. p. 497.
Castnia Kirstenii, Thon, Archiv, ii. p. 7, f. 6–10, ♂; Walker, List Lep. Het. B. M. p. 33.
C. Fonscolombei, Godart, Enc. Méth. ix. p. 799; Gray, Synops. Trans. Ent. Soc. ii. p. 144; Walker, List Lep. Het. B. M. i. p. 20.
Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval, &c.

34. CASTNIA HEGEMON. *C.* alis anticis rufo-badiis, macula media costali fasciaque obliqua pone medium alæ (ad medium marginis interni et prope apicem dilatata et male determinata) magis brunneis; alis posticis basi nigricantibus, disco flaves-

centi, margine anali albo, limbo lato rubro, strigis duabus undulatis nigris versus angulum analem latioribus et ibi coalitis. Fœmina (sec. sententiam Boisduvalii) differt fasciis alarum anticarum magis distinctis, postica sæpe interrupta; alis posticis disco niveo, strigis nigris marginis postici magis determinatis. Long. corp. unc. $1\frac{1}{2}$. Expans. alar. ant. unc. $3\frac{1}{3}$.

Castnia Hegemon, Kollar, Lep. Brasil. Ann. Wien, i. 217, pl. 13. f. 2; Walker, List Lep. Het. B. M. i. p. 26; Boisduval, H. n. Lép. Hét. p. 514.

C. Dalmannii, Boisduval, H. n. Lép. Hét. p. 512 (nec Gray = *Grayi,* Bdv. p. 498).

Dr. Boisduval has mistaken this very distinct species for *C. Dalmannii* of Gray, and has applied the name of *Grayi* to the latter insect.

Hab. Brasilia, Rio Janeiro. In Mus. Britann., et Hopeiano Oxoniæ.

35. CASTNIA CIELA. "Ailes supérieures d'un gris-blanchâtre chatoyant en vert ou en violet, avec la base, le bord terminal, une grosse tache sous-costale et une bande transversale de couleur brune; la bande transversale située sur le tiers postérieur est sinuée; elle se dilate sur la côte et sur le bord interne, de sorte qu'elle est un peu étranglée dans son milieu. Ailes inférieures d'une belle couleur orange, avec un arc discoïdal noir; leur tiers postérieur est marqué d'une rangée de taches un peu oblongues, un peu plus pâles que le fond, séparées par des nervures noires et renfermées entre deux lignes ondulées d'un noir foncé." Expans. alar. antic. 8 centim.

Castnia ciela (Boisduval, MS.), Herr.-Schäffer, Samml. ausserеur. Schmett. figs. 486, 487; Boisduval, H. n. Lép. Hét. p. 532; Walker, List Lep. Het. B. M. pt. xxxi. p. 43.

Hab. Bahia, Penambuco. In Mus. Boisduval.

36. CASTNIA ARGUS. "Ailes supérieures pointues au sommet, d'une teinte brune obscure, qui oblitère en partie des bandes d'une couleur plus foncée, disposées comme dans les espèces précédentes (*Phalaris* et *Mygdon*) mais beaucoup moins distinctes; cependant on voit toujours dans la fissure de la bande bifide trois petites taches blanches plus ou moins marquées, un peu confluentes. Ailes inférieures noires, avec trois rangées parallèles de taches mal alignées, dont celles des deux premières séries sont blanches, plus ou moins cerclées de roux vif et celles du bord marginal, qui sont presque pontiformes, d'un fauve orangé ainsi que la frange de l'angle anal: chez la femelle, on voit sur les secondes ailes une tache fauve entre le disc et la base." Expans. alar. antic. 12 centim.

Castnia argus, Boisduval, H. n. Lép. Hét. p. 522.

This species, which I examined in Dr. Boisduval's collection, appears to me to be scarcely different from *C. mygdon*, being only of a larger size, and with a few more spots towards the base of the hind wings.

Hab. Brasilia. In Mus. Boisduval.

37. CASTNIA MYGDON. *C.* alis anticis olivaceo-fuscis viridi nitentibus; basi, fascia irregulari obliqua e medio costæ ad angulum internum extensa (ramum internum paullo pone medium emittente ad medium marginis interni currentem), maculaque magna

costali subapicali (guttas tres subhyalinas includente) margineque apicali obscurioribus; alis posticis nigricantibus, inter medium et marginem posticum fasciis duabus irregularibus e maculis subovalibus albidis aut flavidis formatis maculisque nonnullis plus minusve obscurioribus versus medium disci positis. Long. corp. unc. $1\frac{1}{4}$. Exp. alar. antic. unc. $2\frac{1}{2}$–3 (8–12 centim.).

Castnia mygdon, Dalm. Mon. p. 20, pl. 1. f. 2; Act. Holm. 1824. p. 403; Gray, Trans. Ent. Soc. ii. p. 145; Walker, List Lep. Het. B. M. i. p. 28.

C. phalaris, Godart, Enc. Méth. ix. 799 (nec Fabricius, &c.); Dalman, Monogr. Castn. p. 22; Act. Holm. 1824, p. 405; Gray, Trans. Ent. Soc. Lond. ii. p. 145; Boisduval, H. n. Lép. Hét. p. 521.

Sympalamides mimon, Hübner, Samml. exot. Schmett. figs. 1, 2.

Hab. Brasilia, Parana, Papagaya. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

38. Castnia chelone. "*C.* alis anticis maris cinereis, fœminæ fusco-cinereis, fasciis duabus, maris murinis obsoletis, fœminæ albis; posticis aterrimis, cyaneo-micantibus, fascia sinuato-angulata, fusca albido-marginata." Exp. alar. antic. ♂ unc. 2 lin. 9 (7 centim.), ♀ 3″ 5‴ (9 centim.).

Castnia chelone, Hopffer, Neue Schmett. Heft ii. tab. iv. figs. 1, 2; Boisduval, H. n. Lép. Hét. p. 530.

Hab. Mexico. In Mus. Berol.

39. Castnia Menetriesi. "Ailes supérieures pointues au sommet, d'un brun noir assez obscur, avec deux bandes transverses d'un noir plus foncé, dont l'antérieure bifide et la postérieure sinuée; outre cela, ces deux bandes paraissent réunies par un rameau latéral; le long de la côte on voit aussi deux taches plus pâles que la teinte générale. Ailes inférieures noires, marquées vers leur milieu d'une grande tache jaune transversale, sinuée en avant, suivie en arrière, du côté de l'angle externe, de quatre à cinq points orangés, alignés et d'un autre point semblable rejeté en dehors. La gouttière abdominale est blanche."

"À peu pres de la taille de la femelle de *C. Boisduvalii,* dont elle a le port."

Castnia Menetriesi, Boisduval, H. n. Lép. Hét. p. 511.

Hab. Brasilia. In Mus. Boisduval.

40. Castnia Humboldti. "Ailes supérieures d'un brun noirâtre, avec un reflet olivâtre tres-prononcé; elles sont traversées du milieu de la côte à l'angle anal, par une bande blanche, atténuée inférieurement; elles ont, en outre, du côté du sommet, une bande courte, flexueuse, maculaire, bien nette, composée de cinq taches un peu oblongues. Ailes inférieures d'un brun roux à leur extrémité, traversées par une bande d'un blanc pur, sinué en dedans et s'élargissant insensiblement, pour arriver à l'angle anal; leur frange est entièrement blanche. Un peu plus grande que *l'Atymnius,* avec les ailes plus pointues au sommet."

Castnia Humboldti, Boisduval, H. n. Lép. Hét. p. 528.

Obs. Fascia 5-macularis subapicalis alarum anticarum, in individuo Boisduvalliano guttas duas subcostales albas supra gerit; hæc fascia in individuis Musæi Gallici e maculis fere obsoletis constat.

Hab. Nova Granada. In Mus. Parisiensi et Boisduval.

41. Castnia salasia. "Ailes supérieures d'un brun noirâtre, à reflet verdâtre : elles sont marquées d'une bande linéaire très-étroite, ou plutôt d'une raie enfumée, allant du milieu de la côte à l'angle interne ; ou voit, en outre, vers le sommet, mais très-faiblement, l'empreinte de la bande sinuée du dessous. Ailes inférieures noires vers la base, avec un reflet vert, brunes à l'extrémité à reflet rougeâtre, elles sont traversées, comme dans les espèces du même groupe, par une bande d'un blanc pur, mais à reflet violâtre, légèrement sinuée en dedans, et s'élargissant insensiblement pour gagner l'angle anal. Frange des quatre ailes entièrement noire."

De la taille de *l'Atymnius* avec les ailes plus pointues au sommet.

Castnia salasia, Boisduval, H. n. Lép. Hét. p. 529.

Hab. Mexico. In Mus. Boisduval.

42. Castnia evalthe. *C.* alis latis, nigro-fuscis, anticis fascia media obliqua ad angulum analem extensa (ibique attenuata) alteraque subapicali tenuiore (interdum obsoleta) albis aut flavis ; posticis fascia media maculari vel macula magna discoidali flava (interdum externe rufo late marginato) fasciaque maculari submarginali anguloque anali late rufis. Expans. alar. ant. unc. $2\frac{1}{3}$–$2\frac{2}{3}$ (7–10 centim.).

Var. *a* alis anticis bifasciatis, alis posticis fascia media submaculari flava, angulo anali et maculis 5 vel 6 submarginalibus rufis. (Cramer, pl. 17. f. E, F.) Surinam ; Ecuador. In Mus. Hopeiano.

Var. *β* maculis discoidalibus in alis posticis in maculam integram majorem coalitis. (*C. euphrosyne*, Perty, Delect. pl. 31. f. 1 ; Walker, List Lep. Het. B. M. i. 15.) Brasilia et Demerara. In Mus. Hopeiano.

Var. *γ* differt e var. *β* macula discoidali flava in alis posticis extus rufo late marginata, colore rufo cum maculis submarginalibus plus minusve coalito. (Dalman, tab. i. f. 3.)

Var. *δ* similis var. *a*, at fascia subapicali in alis anticis obliterata maculisque fasciæ mediæ posticarum angulo externo proximis fere obsoletis. (*C. Viryi*, Boisduval, p. 515, pl. 11. fig. 3.) Mexico et Nicaragua. In Mus. Hopeiano.

Papilio evalthe, Fabricius, Syst. Ent. p. 480 ; Ent. Syst. iii. 1, p. 45 ; Donovan, N. Hist. Ins. India, Lep. pl. 1 ; Herbst, Icon. pl. 137. f. 1, 2 ; Boisduval, H. n. Lép. Hét. p. 514 (*Castnia e.*) ; Dalman, Monogr. p. 14, tab. i. f. 3 ; Act. Holm. 1824, p. 401 ; Godart, Enc. Méth. ix. p. 798 ; Gray, Trans. Ent. Soc. L. ii. p. 143 ; Walker, List Lep. Het. B. M. i. p. 21.

P. dardanus, Cramer, i. pl. 17. f. E, F.

C. euphrosyne, Perty *ut suprà* ; Gray, *op. cit.* p. 144.

E. Viryi, Boisduval *ut suprà.*

Hab. Brasilia, Para, Cayenne, Mexico, Ecuador. In Mus. Britann., Hopeiano Oxoniæ (individua 8), Boisduval.

43. Castnia amycus. *C.* alis anticis nigro-fuscis pallidius variegatis, squamis magnis griseo-albis indutis, puncto seu fasciola subobsoleta ad apicem cellulæ discoidalis fasciaque plus minusve obsoleta alba vel albida pone medium costæ ad angulum analem extensa margine interno dentato, fasciolaque subobsoleta abbreviata subapicali, margine postico ante medium fasciculo elongato squamarum instructo ; alis

posticis nigris, medio disci ferrugineo fasciaque pone medium e maculis parvis plus minusve obsoletis maculisque nonnullis submarginalibus rufis. Long. corp. lin. $9\frac{1}{4}$–14. Exp. alar. antic. unc. $1\frac{5}{6}$–3.

Variat disco alarum posticarum omnino nigro, maculisque rufis multo minoribus fere obsoletis.

Papilio amycus, Cram. iii. pl. 227, D, E.; Dalman, Monogr. p. 19 (*Castnia a.*); Act. Holm. 1824, p. 403; G. R. Gray, Trans. Ent. Soc. L. ii. p. 145; Godart, Enc. Méth. ix. p. 798; Walker, List Lep. Het. B. M. i. p. 27; Boisduval, H. n. Lép. Hét. p. 504.

Obs. As this species differs in the greater or less amount of red markings on the hind wings, I am much inclined to consider the *C. meditrina* of Hopffer to be an extreme variety in which the red has entirely disappeared. The less acute apex of the fore wings relied upon by Boisduval appears to me to be the sexual (female) character.

Hab. Surinam, Brazil, Papagaya. In Mus. Britann., Hopeiano Oxoniæ (7 individua), Boisduval.

44. Castnia meditrina. "*C.* alis anticis virescenti-nigris, fascia undulata obliqua guttisque ad costam tribus albis; posticis aterrimis cyaneo micantibus." Expans. alar. ant. unc. 2 lin. 5.

The hind margin of the fore wings has the dilated patch of elongated scales noticed in the description of the preceding, and to which neither the description of Hopffer nor that of Boisduval allude.

Castnia meditrina, Hopffer, Neue Schmett. Heft ii. tab. v. f. 4; Boisduval, H. n. Lép. Hét. p. 505.

An var. *C. amycus*?

Hab. Brasilia. In Mus. Berolini.

45. Castnia Hubneri. *C.* alis anticis fulvo-fuscescentibus, fascia maculari plus minusve continua e medio costæ ad angulum internum extensa alteraque parallela e maculis sex magis distinctis inter medium et apicem albis; alis posticis basi margineque lato abdominali fuscis, dimidio costali rufo-fulvo; dimidio externo nigro, maculis 7 cuneiformibus pone medium irregulariter dispositis, serieque submarginali macularum rufo-fulvarum; fimbria lata pallide fusca.

Castnia Hübneri (Boisduval, MS.), Latreille in Cuvier, R. An. 2d ed. iii. pl. 20. f. 2, p. 439; Gray, Trans. Ent. Soc. Lond. i. p. 146; Walker, List Lep. Het. B. M. i. p. 30; Boisduval, H. n. Lép. Hét. p. 516.

Castnia Sternbergii, Kollar, Lep. Bras. Ann. Wien, i. 216, pl. 12. f. 4.

Synemon Sternbergii, Mikan, Delect. Fl. et Fr. Brasil.; Schaufuss, Nunquam Otiosus, p. 11.

Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

46. Castnia juturna. *C.* alis anticis fuscis, basi et margine interno griseo-squamosis, fasciis 4 albidis, duabus anticis obliquis, e costa, marginem posticum et externum haud attingentibus, duabus posticis brevioribus magis transversis, 3ta e maculis obcuneatis composita, 4ta venis rufis in maculas divisa; alis posticis basi fuscis, macula magna nigra sanguineo cincta, medio fascia alba valde sinuata sanguineo

extus marginata; dimidio externo alarum nigro, fascia maculari subapicali sanguinea, maculis versus angulum externum albo irroratis. Long. corp. unc. $1\frac{1}{2}$. Expans. alar. antic. unc. $3\frac{1}{4}$–4.

Castnia juturna, Hopffer, Neue Schmett. pl. iv. f. 3; Boisduval, H. n. Lép. Hét. p. 508.
Castnia lorzæ, Boisduval, MS. olim.

Hab. Brasilia (*Minas*). In Mus. Hopeiano Oxoniæ, Boisduval.

47. CASTNIA CRONIS. *C.* alis anticis nigris, costæ basi maculisque thoracis rufis vel albis, plaga magna discoidali postice dilatata, alteraque subcuneata in medio costæ, fascia abbreviata obliqua e maculis tribus composita pone medium, altera e maculis 9 ovalibus submarginalibus albis, imargine ipso albo guttato; alis posticis abdomineque albidis, margine apicali tenui nigro, intus crenulato. Expans. alar. antic. unc. 3–$3\frac{1}{2}$.

Papilio cronis, Cramer, i. pl. 60. f. C. ??, pl. 178. f. A; Oliv. Enc. Méth. Ins. pl. 12. f. 7; Dalman, Monogr. Castn. p. 23 (*Castnia cr.*); Act. Holm. 1824, p. 504; Godart, Enc. Méth. ix. 801; Gray, Trans. Ent. Soc. L. ii. p. 146; Walker, List Lep. Het. B. M. i. p. 29. n. 34; Boisduval, H. n. Lép. Hét. p. 534.

Obs. M. Boisduval, H. n. Lép. Hét. p. 534, considers that the figure given by Cramer, i. pl. 60. f. C, as the male of *C. cronis* (*Pieris cronissa,* Godart, Enc. M. ix. Suppl. p. 814; *Pieris cronis,* Boisduval H. n. Lép. i. p. 548) is manufactured out of the head, abdomen, and hind wings of a *Pieris* attached to a mutilated thorax and fore wings of a *C. cronis.*

Hab. Surinam. In Mus. Britann., Loddige et Herrich-Schäffer (valde mutilata).

48. CASTNIA CRONIDA. "Ailes supérieures noires, avec des taches blanches disposées à peu près comme dans la *cronis,* savoir, une très-grande longitudinale sur le milieu, une médiocrement grande sur la côte et les autres plus petites à l'extrémité; ces dernières sont alignées au nombre de quatre ou cinq seulement, et sont précédées vers le sommet de trois autres taches blanches allongées, il y a, en outre, sur les nervures, une série de petits points blancs, très-peu indiqués; l'origine de la côte est rouge comme dans la *cronis.* Ailes inférieures d'un blanc un peu jaunâtre, avec une large bordure noire, divisée par un cordon de gros points d'un blanc un peu jaunâtre. Le corselet est noir, marqué de deux points rouges, avec le collier blanc interrompu; l'abdomen est d'un blanc jaunâtre avec l'extrémité d'un jaune d'ocre."

" La femelle ne diffère du mâle que par sa taille plus grande et par la bordure des ailes inférieures plus large avec des points plus gros."

Expans. alar. antic. ♂ $8\frac{1}{2}$, ♀ $10\frac{1}{2}$ centim.

Castnia cronida, Herr.-Schäffer, Samml. aussereur. Schm. fig. 142; Boisduval, H. n. Lép. Hét. p. 535; Walker, List Lep. Het. p. 1581.

Except in the less complete development of the subapical row of spots on the fore wings, and the wider black margin of the hind wings, this supposed species is evidently identical with *C. cronis,* which appears, from Gray's description of Mr. Loddige's specimen, to be subject to a certain amount of variation.

Hab. Guyane française. In Mus. Stuttgard et Boisduval.

49. Castnia licoïdes. "Elle a tout-à-fait le port et la taille de l'espèce précédente (*Licus*) dont elle est très-voisin, mais la massue de ses antennes est jaune. Ses ailes supérieures sont de même d'un brun-noir chatoyant en vert, avec une bande linéaire blanche *dentée en dehors*, allant du milieu de la côte à l'angle anal. Il n'y a de bande sinuée à l'extrémité; la frange est blanche. Les ailes inférieures sont d'un noir-brun, traversées dans leur milieu par une bande blanche à reflet un peu violet, *dentée* en dehors, s'élargissant insensiblement pour arriver à l'angle anal; le bord terminal est divisé par un cordon de sept taches rouges, dont l'anale est double et plus petite."

Castnia licoïdes, Boisduval, H. n. Lép. Hét. p. 527.
Urbanus licus, Hübner, Samml. exot. Schmett. v. i. Celeb. a, fig. i. 2.

Hab. Brasilia, Santa Catherina. In Mus. Boisduval.

50. Castnia inornata. "Ferrugineo-fusca, subtus cervina, abdominis dorso nigricante maculis luteis ornato, alis anticis fasciis duabus fuscis obliquis indeterminatis, macula reniformi obscure cinerea fusco marginata."

"Female ferruginous-brown, fawn-colour beneath. Frontal tuft porrect lanceolate, extending rather beyond the head. Antennæ subclavate; tips pale cinereous. Abdomen blackish above, shorter than the interior border of the hind wings, each segment with a transverse luteous spot. Fore wings with two irregular oblique brown bands, which are diffuse on the outer side, and have between them a reniform dark cinereous mark, which is bordered with brown; underside with two irregular dark brown bands beyond the middle, the first composed of patches, the second much abbreviated hindwards, marginal space fawn-colour. Hind wings with a fringe of very long hairs, which extends across the disk from near the interior border. Hind wings beneath with an irregular abbreviated ferruginous line across the disk, including at its fore end a whitish dot." Length of the body 10 lines, of the wings 31 lines.

Hab. ——? In Coll. T. Chapman, Glasgow.

Castnia inornata, Walker, Cat. Lep. Heteroc. p. 106.

This species belongs to the group of which *Chremes* is the type.

51. Castnia penelope. "Dem *Icarus* in Form und Zeichnung ganz ähnlich, die Oberseite aber in allem blasser, die Zeichnung auf den Hinterflügeln braun statt schwarz, die äussere Querbinde der Oberflügel sowie weissen Tropfen der Unterflügel fast verloschen: auf der Unterseite der Oberflügel alle drei Binden bestimmt ausgeprägt, im Uebrigen opalisirend wie *Icarus* und *veilleicht nur Varietät*." Lat. 78 mm.

Hab. Brasilien.

Castnia penelope, Schaufuss, Nunq. Otios. p. 9.

52. Castnia albofasciata. "Grösser als *mimon*, oben ebenso gezeichnet, die Oberflügel jedoch beiderseits der braunen Querbinden mit weisser, schmaler Kante eingefasst und mit verwischtem Weiss ausgefüllt. Unterflügel mit drei weissen Flecklagen, dieselben mit Schwarz und Zimmetbraun eingefasst, ähnlich wie bei *Phalaris*; doch

ist das Weiss uberwiegend ausgebreitet; unten dem letzteren sehr ähnlich (*veilleicht nur dessen* ♀ ?)." Lat. 88 mm.

Hab. Brasilia. In Mus. Kaden olim.

Castnia albofasciata, Schaufuss, Nunq. Otios. p. 10.

[*Obs.* The three following species form the genus *CERETES* of Boisduval. See *suprà*, pp. 166, 167.]

53. CASTNIA CHREMES. *C.* alis anticis apice acutis, fuscis aut brunneo-fuscis, basi parum pallidioribus, fascia obliqua pallidiore e medio costæ ad medium disci extensa inde dilatata, parte basali versus medium marginis postici extensa, parte externa ad angulum posticum extensa, fascia altera abbreviata subrecta pallida inter priorem et apicem, strigaque valde indistincta undulata prope marginem posticum: alis posticis maris nigris purpureo læte nitidis, punctis duobus (vel 1) costalibus, margine ad angulum externum punctisque nonnullis submarginalibus læte aurantiaco-rufis; fœminæ rufo-aurantiacis, fasciis duabus maculisque marginalibus nigris: alis anticis subtus pone medium fascia obliqua recta nigra in utroque sexu. Expans. alar. antic. ♂ unc. $2\frac{1}{8}$–$3\frac{1}{4}$, ♀ unc. 3–$3\frac{1}{2}$.

Papilio chremes, Fabricius, Ent. Syst. iii. i. 47 ♀; Jones, Icones, iii. pl. 72. f. 2; Walker, List Lep. Het. B. M. i. p. 31 (*Castnia chremes*); Boisduval, H. n. Lép. Hét. p. 536 (*Ceretes chremes*).

Corybantes nicon, Hübner, Samml. exot. Schmett. ii. Versic. 1. f. 1, 4; Gray, Trans. Ent. Soc. L. ii. p. 148.

Castnia thalaira, Godart, Enc. Méth. ix. 800 (♀).

Castnia Fabricii, Swainson, teste Bdv. *op. cit.* p. 539.

Papilio thaïs, Drury, Ill. iii. pl. 16. f. 4 (not of Walker).

Fœm. var. major (exp. alar. antic. unc. $3\frac{2}{3}$). "Ferrugineo-fusca, aurato viridique micans; pectus et abdomen aurato-ochracea; alæ anticæ fasciis tribus abbreviatis fuscis; posticæ late ochraceæ, subpurpurascentes, postice atræ fasciis duabus arcuatis ochraceis, 1ma submaculari, 2da maculari."

Castnia morphoides, Wlk. List Lep. Heter. B. M. pl. 31. f. 43, = *C. nicon,* Hüb. Exot. Schmett.

Length of wings 44 lines. "Nearly allied to *C. icarus*; but the markings of the fore wings are different."

Brazil. In Mus. Brit.

Fœm. var. minor. (exp. alar. antic. unc. 2–$2\frac{1}{4}$).

Castnia thaïs, Boisduval, *op. cit.* p. 537.

Hab. Brasilia, Minas Geraes, Rio Janeiro, between Sapezal and Conceiçao (*Burchell,* 30 October, 1827). "Umbroso sylvæ densæ, volatu et coloribus *Phalenæ*," Burchell, MS. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

From the great diversity of the sexes of this and the following species, and the variableness in the intensity of their markings, there has been great confusion in their nomenclature.

The description of *C. chremes* (female) given by Fabricius is scarcely sufficient to distinguish it from the smaller species, although his words "fasciis duabus" would imply simple and not irregular stripes, and his description of the fore wings, "subtus fere con-

colores et dilutiores," apply to it better than to the female of *C. Marcelserresii*. Mr. Walker, from an inspection of the original drawings of Jones's 'Icones,' *Danai*, pl. 72, referred the Fabrician insect to the *C. nicon* of Hübner. A copy of the figure of Jones was made by Donovan, and is preserved in the Hopeian collection at Oxford. By the kindness of Mr. Drewitt, the relative of Mr. Jones, and the present possessor of the volumes of his 'Icones,' I have been enabled to verify the figure and insect, the fascia beyond the middle of the fore wings being quite straight, and extending to the anal angle; the apical margin of the fore wings is but slightly rounded; and the black edge of the hind wing does not extend to the outer angle.

The figure of Drury of his *Pap. thaïs* (iii. pl. 16. f. 4) exhibits several characters hitherto unnoticed, which clearly identify it with Hübner's figure of the female of *C. nicon*. These are the subtruncate (instead of strongly rounded) apical margin of the fore wings, the curved (instead of quite straight and transverse) inner edge to the central pale fascia of the fore wings, and the fulvous outer angle of the hind wings, towards which the second black fascia emits two or three short strigæ or small oval spots. In the females of *C. Marcelserresii* these strigæ or spots are united to the marginal fascia, which is extended to the outer angle.

The males of the two species are at once distinguished by the undersides of their fore wings being broadly black in the male of *C. chremes* and pale brownish grey in that of *C. Marcelserresii*.

I cannot but think the unique female described by Boisduval as agreeing with "la figure donnée par Drury très-exacte," is a very small female of *thaïs*, measuring only 5 centimetres in the expanse of the fore wings, whereas the female which he describes of *thaïs* (his *C. chremes*) measures 9 centimetres.

The *Castnia morphoides* of Walker is certainly only a large female of *C. thaïs*, agreeing closely with Hübner's figure (*nicon* ♀).

The following is the description of an insect from Georgia, in North America, which Herr Schaufuss considers may be a variety of this species.

"*C. thaïs*, var.? Schaufuss [Nunq. Otios. p. 10]. Viel kleiner als *Thais*, Dr. Die Binden oben fast verloschen oder schmäler, unten orangegelb: Oberflügel mit nur einer aus dreieckigen Flecken zusammengesetzen Binde, die in die Randflecken, welche oben nur angebräunt erscheinen, verläuft."

Hab. Georgia, America.

54. Castnia Marcelserresii. *C.* alis anticis ovatis (margine apicali versus apicem rotundato), livido-fuscis aut fusco-fulvescentibus, fascia recta obscura e medio costæ ad medium marginis interni extensa, macula magna obliqua obscura intus subito dilatata et interdum cum fascia irregulari e costa versus angulum analem extensa connexa, apice obscuriore et parum angulato: alis posticis maris fuscis, serie subapicali lunularum pallidiorum vix distinctarum (singulis punctum nigrum includentibus): alis posticis fœminæ rufo-fulvis, fasciis tribus undulatis nigris (ultima marginali intus dentata): alis anticis subtus in utroque sexu pone medium macula magna bipartita costali fasciaque subapicali plus minusve distincta nigris. Long. corp. unc. 1. Expans. alar. antic. unc. $2\frac{1}{3}$–3.

Mas. *Castnia Marel-serresii,* Godart, Enc. M. ix. 800; Geyer, in Hübner, Zuträge exot. Schm. iii. f. 711, 712; Gray, Trans. Ent. Soc. ii. p. 148 (excl. syn. *P. thaïs,* Drury).
Fœm. *C. Fabricii,* Godart, Enc. M. ix. 800; Boisduval, H. n. Lép. Hét. p. 538 (nec Swainson).
C. thaïs, Walker, List Lep. Het. B. M. i. 31 (not of Drury).

Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ (5 mares, 6 fœm.) &c.

The male of this species was described by Godart under the name adopted above, and the female under that of *Fabricii,* with the observation that "ce Lépidoptère paraît être l'un des sexes de celui que M. Swainson a figuré sous le nom de *C. Fabricii.*" This supposition being erroneous, I have not thought proper to follow M. Boisduval in retaining the name of *C. Fabricii* for this species, but have adopted the usual plan of preferring the name given to the male insect, *C. Marcel-serresii.* Gray, followed by Walker, erroneously considered the *P. thaïs* of Drury to be identical with the female of this species.

55. CASTNIA DIVA. *C.* alis anticis apice acutis, supra nigro-fuscis, fascia latissima albida ferrugineo-squamosa, e medio costæ ad angulum analem extensa, pone medium subinterrupta, macula parva discoïdali, alterisque parvis ovalibus pone medium albis aut albidis brunneo circumdatis squamisque nonnullis subapicalibus ferrugineis: alis posticis basi læte purpureis, fascia lata pone medium nigra, margineque postico versus angulum externum aurantiaco intus undato. Expans. alar. antic. unc. $2\frac{5}{6}$–$4\frac{1}{2}$.

Castnia diva, Butler, Lepid. Exot. pl. 17. f. 1, 2.
C. tricolor, Felder, Reise Novara, Zool. Bd. ii. Lep. lxxix. fig. 3 (sine descriptione); Boisduval, H. n. Lép. Hét. p. 531.

Hab. Nicaragua, Columbia. In Mus. Britann., Hopeiano Oxoniæ, Felder, Boisduval.

Scetion II. *Species with the fore wings elongate-ovate.* (See *suprà*, p. 167, and Plate XXXI.)

= Genus *GAZERA,* Boisduval, in H.-Schäffer, Samml. aussereur. Schm.; Hist. nat. Lép. Hét. p. 546.

56. (1) CASTNIA SIMULANS. "Ailes entières, les supérieures d'une teinte roussâtre enfumée depuis la base jusqu'au-delà du milieu, avec une tache oblique d'un brun noirâtre à l'extrémité de la cellule discoïdale: la partie postérieure de ces mêmes ailes est d'un brun noir, coupée par une bande oblique, droite, partant de la côte et n'arrivant pas jusqu'au bord externe, outre cela il y a, à partir de l'angle interne, une rangée de trois ou quatre points jaunâtres qui ne remonte pas jusqu'au milieu du bord extérieur; le bord interne, la nervure médiane et la côte sont plus ou moins brunâtres. Ailes inférieures d'un fauve roussâtre, traversées au-delà du milieu par une bande noire maculaire, elles ont en outre à l'extrémité une espèce de bordure noirâtre formée des taches cunéiformes; cette même bordure offre vers l'angle anal deux points jaunâtres et un point semblable vers l'angle externe. Taille de *Lycoræa ceres.*"

Gazera simulans, Boisduval, H. n. Lép. Hét. p. 547, pl. 11. fig. 4.

This species is the representative of *Lycoræa ceres,* one of the Heliconian butterflies. It is closely allied to, if not a variety of *C. personata,* Wlk.

Hab. Columbia. In Mus. Boisduval.

57. (2) Castnia personata. "Fusca, aureo viridi micans, subtus flava; antennæ apice flavescentes; abdomen subauratum vittis duabus ochraceis: alæ cervinæ, sat angustæ, lituris nigro-fuscis, fascia marginali flavescente maculata; anticæ vitta discali, strigas quatuor emittente, posticæ vittis duabus parallelis extus abbreviatis. Nearly allied to *C. linus*. Length of wings 36 lines."—*Walker*.

The above description is unintelligible, as may be seen by M. Boisduval's attempt to translate it into French, and by his inability to perceive its apparent identity with his *Gazera simulans*. The general colour of the four wings is obscure luteous, with black markings; these consist of an oblique patch, arising on the costa before the middle, dilated towards the middle of the wing into an elongated patch; beyond the middle of the costa is a broad oblique band reaching to the middle, followed by four more distinct luteous longitudinal spots preceding the broadly black apex; the inner margin is dusky: the hind wings are rather lighter luteous in the middle of the disk; the costa, a central bar, and the apical margin black, the latter with four white dots on its inner edge near the outer angle. Expans. alar. antic. lin. 36.

Castnia personata, Walker, List Lep. Het. B. M. xxxi. p. 43; Boisduval, H. n. Lép. Hét. p. 546 (*Gazera personata*).

Hab. Guyaquil. In Mus. Britann.

58. (3) Castnia cononia. (Plate XXXII. fig. 5.) Alis anticis elongato-ovalibus apice rotundatis, dimidio basali obscure luteo-fulvo, striga postcostali plagaque magna prope marginem internum nigris, hac striolam pallidiorem includente; macula media (prope costam) postice angulata ejusdem coloris fasciaque obliqua (e maculis 5 ovalibus constante) inter medium et apicem alæ albida; alis posticis saturate fulvis, fascia postcostali maculis quinque ovatis pone medium, ad marginem analem majoribus et connexis, limboque apicali nigris; capite albo punctato, collo postice fulvo; fascia transversa media thoracis flavida; abdominis fusci lateribus anguste fulvis, segmentis ventralibus basalibus et apicalibus fulvis, intermediis nigris. Long. corp. unc. $1\frac{1}{3}$. Exp. alar. antic. unc. $3\frac{2}{3}$.

Hab. Ecuador. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This species is nearest allied to *C. ecuadoria*, with which the arrangement of the cell and branches of the postcostal vein of the fore wings nearly agrees; but the transverse vein closing this cell is longer, in consequence of which the branches 3 and 4 arise wider apart.

59. (4) Castnia cratina. (Plate XXXII. fig. 4.) Alis anticis oblongo-ovatis apice subrotundatis fulvis; striga costali prope basin, altera subcostali tertiaque multo majore prope marginem internum, striga undulata obliqua discoidali, macula rotunda media cum margine antico connexa, plaga magna obliqua inter medium et apicem, limboque apicali dentato nigris; alis posticis aurantiaco-rufis, striga subcostali, fascia lata media e margine anali fere ad angulum externum extensa limboque dentato nigris; capite albo maculato, collo lato fulvo fascia transversa tenui flavida; abdomine

nigricante lateribus segmentisque 5 apicalibus subtus fulvis; thorace subtus albido vario; antennis albidis. Long. corp. unc. $1\frac{2}{3}$. Expans. alar. antic. unc. $4\frac{1}{2}$.

Hab. Amazonia. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This species is closely allied to *C. cycna*, but has the fore wings less rounded; the arrangement of the cell and branches of the postcostal vein agrees with that of *C. cycna*.

60. (5) Castnia ecuadoria. (Plate XXXII. fig. 6.) Alis anticis oblongo-ovatis apice rotundatis; e basi ultra medium obscure lutescentibus, apice lato fusco; cellula basali fusco marginata, macula media rotunda subcostali, striga obscura media, alteraque majore marginis interni fuscis; alis posticis obscure fulvis nebula magna ex angulo anali versus medium alæ extensa fimbriaque fuscis; corpore fusco; collari, fascia media transversa thoracis, lateribusque abdominis lutescenti-albidis; antennis lutescentibus: alis subtus magis rufescenti-fulvis, apice fusco, posticis stria tenui transversa subbasali fusca. Long. corp. unc. $1\frac{1}{4}$. Expans. alar. antic. unc. $3\frac{1}{3}$.

Hab. Ecuador. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This species so closely resembles *C. truxilla* in general form and appearance that it might easily be considered to be a variety of that species; but the arrangement of the veins proves them to be totally different, there being a very distinct elongate-ovate cell in *C. ecuadoria*, formed at the base of the branches of the postcostal vein, the 2nd, 3rd, 4th, 5th, and 5*th being emitted at nearly equal distances apart at the extremity of the cell (Plate XXVIII. fig. 10).

61. (6) Castnia zagræa. "Ailes supérieures noires avec une bande longitudinale fauve, sinuée, un peu irrégulière, coupée par les nervures partant du milieu de la base et se prolongeant vers le bord postérieur; outre cela, il y a sur le milieu de la côte un petit trait, et au-dessous de celui-ci une tache un peu triangulaire de la même couleur, divisée par les nervures, l'extrémité postérieure offre deux rangées parallèles de taches blanches lavées de jaune; mais la première rangée ne descend pas au-delà du milieu de l'aile." Expans. alar. antic. unc. $4\frac{1}{4}$.

Gazera zagræa, Felder, Reise d. Novara, Zool. Bd. ii. Abth. 2, pl. 79. f. 2 (sine descr.); Boisduval, H. n. Lép. Hét. p. 547.

Hab. Panama. In Mus. Felder.

This is the Heterocerous counterpart of *Papilio zagræus*, which is itself the counterpart of one of the Heliconian butterflies.

Nearly allied to *C. cratina*, Westw., but with the fulvous markings of the fore wings and the black markings of the hind wings much less developed in size. Fore wings black, with a longitudinal fulvous vitta of irregular width, extending from the base of the wing along its middle, rather deflexed and narrowed at its extremity; considerably beyond the middle of the wing an oblique cuneated patch of the same colour arises at the middle of the costa, followed by a row of six suboval spots, the lowest of which ranges with the extremity of the central bar; beyond these is a submarginal row of nine white

spots, the middle ones being the smallest; hind wings fulvous, costa narrowly black, with a row of semiovate black spots beyond the middle, not extending to the outer angle; apical margin black and strongly dentate within, the teeth near the anal angle uniting with the spots of the inner row. Described from the figure of Dr. Felder.

62. (7) Castnia truxilla. (Plate XXXII. fig. 3.) Alis fuscis, anticis oblongo-ovatis apice rotundatis macula magna media lutescente e costa oblique versus angulum internum extensa, guttam parvam obscuram fuscescentem versus costam includente; gutta parva lutea prope angulum internum nebulisque duabus oblongis pallidioribus prope marginem internum; alis posticis ovalibus fuscis, basi ipsa ad marginem analem squamis fulvis notata; corpore fusco, capite albo-maculato, patagiis fulvo-marginatis; abdomine fusco, lateribus anguste fulvis; abdomine subtus basi et apice fulvis, segmentis intermediis nigris, griseo marginatis; antennis fuscis, apice fulvis; alis subtus pallidioribus, costa posticarum fulva. Long. corp. unc. $1\frac{1}{3}$. Expans. alar. antic. unc. $3\frac{1}{2}$.

Hab. Columbia. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

This obscurely coloured species is remarkable for its elongated fore wings (which are rounded at the apex) and its oval hind wings. In the fore wings there is no cell formed by the basal portion of the branches of the postcostal vein; nor is there any transverse connexion between the 3rd and 4th branches of the same vein. (See Plate XXVIII. fig. 12.)

63. (8) Castnia columbina. "Ailes supérieures d'un noir foncé; elles ont à la base, deux bandes longitudinales, d'un roux un peu enfumé, dont l'inférieure se termine par deux rayons blanchâtres: outre cela, il y a sur le milieu de la côte un petit trait blanc et au-dessous de celui-ci, près de la principale nervure, une tache blanche arrondie; plus bas et plus en dehors deux taches blanches cunéiformes, l'extrémité postérieure offre deux rangées parallèles de taches blanches inégales, les unes rondes, les autres allongées: ailes inférieures d'un fauve vif, avec une bordure noire crénelée, et une rangée de points blancs; outre cela elles offrent au-delà du milieu deux ou trois points noirâtres disposés transversalement." Expans. alar. antic. 12 centim.

Gazera columbina, Boisduval, H. n. Lép. Hét. p. 546.

Hab. Nova Granada. In Mus. Boisduval.

Obs. This species is nearly allied to *C. salvina*, but differs in the markings of the hind wings.

64. (9) Castnia salvina. (Plate XXXII. fig. 1.) Alis anticis oblongo-ovatis nigricantibus, basin versus vittis duabus longitudinalibus obscure rufescentibus, maculisque novem, magnitudine variis, discoidalibus, serieque submarginali macularum novem albidarum (maculis apicem appropinquantibus longioribus); alis posticis fulvis, costa limboque lato integro nigris, hoc maculas sex submarginales parvas albas includente: capite et thorace nigris, illo albo maculato, patagiis albo marginatis: antennis fulvis,

basi obscurioribus: alis subtus similiter ac supra coloratis, posticarum costa et striga parallela subcostali nigris: abdomine fulvo, apice obscuriore; subtus medio sterni abdomineque albidis. Long. corp. unc. $1\frac{2}{3}$. Exp. alar. antic. unc. $4\frac{1}{2}$.

Hab. Veragua (*Salvin*). In Mus. Hopeiano Oxoniæ (olim *Saunders*).

The arrangement of the branches of the postcostal vein in this species is peculiar, there being no basal cell formed by the transverse junction of the middle branches; the third branch springs from the second at a considerable distance from the base of the latter; and the 4th and 5th branches arise at a considerable distance from the transverse base of the 6th branch (*i. e. b* 5*), which forms the termination of the discoidal cell.

65. (10) Castnia cycna. (Plate XXXII. fig. 2.) Alis anticis subovatis fusco-nigris, basi, costa, striga media (e basi ad medium alæ extensa) margineque postico obscure fulvis, striga media subcostali obliqua, macula ovali discoidali, fascia obliqua inter medium et apicem maculisque 9 magnitudine variis albidis; alis posticis læte aurantiacis, extus in flavum pallescentibus, limbo intus acute dentato nigro: capite albo-punctato; antennis albidis basi nigricantibus: thorace fascia antica transversa fulva maculisque duabus posticis albidis: abdomine fusco, lateribus ventreque fulvis. Long. corp. unc. $1\frac{1}{2}$. Expans. alar. antic. unc. 4.

Var. minor (exp. al. ant. unc. $3\frac{1}{4}$) fascia basali alæ anticæ et striga marginis postici obsoletis, coloribus etiam magis vividis.

Hab. Columbia. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

The broadly ovate fore wings and the richly coloured hind wings, with their strongly dentated black border, distinguish this species, which agrees with *C. ecuadoria* in the arrangement of the cells and branches of the subcostal vein of the fore wings.

66. (11) Castnia mimica. (Plate XXXII. fig. 7.) Alis fusco-nigricantibus, certo situ parum metallicis, anticis elongatis basi obscurioribus, squamis nonnullis rufis juxta tegulas; posticis macula magna transverso-ovali inter medium et angulum analem flavescente: capite nigro, punctis duobus ante antennas, linea tenui postica pone oculos, thoracis macula minuta antica albis; tegulis rufis; abdominis segmentis intermediis lateribus rufo angulariter maculatis, squamisque albis strigas breves laterales ad basin segmentorum formantibus: antennis nigris, clava subtus fulva: coxis anticis et 2 posticis geniculisque pedum 4 anticorum rufis: abdomine subtus utrinque albo maculato, segmentis intermediis macula parva rufa in medio notatis. Long. corp. unc. $1\frac{1}{4}$. Expans. alar. antic. unc. 3 lin.

Hab. Amazonia. In Mus. Hopeiano Oxoniæ (olim *Saunders*).

C. mimica, Felder, Reise d. Novara, Ins. Lep. pl. 79. f. 4 (sine descript.).

This remarkable species is, as to its colours, unique in the group; its wings are also of peculiar form, giving it an aspect quite alien to its allies; it possesses the elongated cell at the base of the branches of the subcostal vein; but the 3rd and 4th branches arise at some distance beyond the cell. (Plate XXIX. figs. 11, 12.)

67. (12) Castnia linus. C. alis nigris hyalino-albido variis, venis nigris; anticis macula magna subtrigona, venis divisa, fascia media e costa ad angulum internum apicalem extensa in duas partes interrupta, macula magna ovali subapicali in sex partes venis divisa, serieque submarginali punctorum alborum: alis posticis macula maxima discoidali transverso-ovali, serieque externa macularum conoidearum magnitudine decrescentium versus angulum analem, ubi in puncta alba evadunt. Long. corp. unc. $1\frac{1}{4}$–$1\frac{1}{2}$. Expans. alar. antic. unc. $3\frac{1}{2}$–4.

Variat venis in disco pallido alarum posticarum concoloribus nec nigris, maculis prope angulum externum minoribus punctisque versus angulum analem fere obliteratis.

Papilio linus, Cramer, iii. pl. 257. fig. A; Herbst, Ins. pl. 78. f. 4.; Dalman, Monogr. p. 24; Act. Holm. 1824, p. 405 (*Castnia linus*); Gray, Trans. Ent. Soc. L. ii. p. 147; Walker, Cat. Lep. B. M. p. 32; Boisduval, H. n. Lép. Hét. p. 544, f. 15.

Var. *C. heliconioides*, Herrich-Schäffer, Samml. exot. Schmett. pl. 4; Walker, *op. cit.* p. 1582; Boisduval, H. n. Lép. Hét. p. 545 (*Gazera hel.*).

Hab. Brasilia, Surinam, Cayenne, Guatemala. Mus. Britann., Hopeiano Oxoniæ, Boisduval.

Dr. Boisduval has separated two specimens in his collection from Cayenne from the more ordinary Brazilian ones, considering the former the true representatives of Cramer's figure of *C. linus* from Surinam, and giving to the Brazilian insects a new name, *G. heliconides* (recte *Heliconioides*, as previously published by Herrich-Schäffer). I cannot, however, regard these insects otherwise than as belonging to one species, differing both individually and geographically, and even sexually: variations of the latter character are exhibited in the form of the wings, which modifies to a certain extent the form of the markings. Thus a female specimen in the Hopeian Collection from Cayenne has the fore wings broad and almost ovate; and a male from the Amazons (also with the veins of the disk of the hind wings concolorous) has the fore wings remarkably long, as will be seen from the admeasurement of one of the fore wings of these individuals as compared with those of two Brazilian specimens with black veins.

	Veins of disk of hind wings concolorous.		Veins of disk of hind wings black.	
	Cayenne ♀.	Amazon ♂.	Brazilian ♀.	Brazilian ♂.
Length of fore wing	48 centim.	50	47	45
Width of ditto	25 „	23	$22\frac{1}{2}$	22
Length of outer margin from extreme apex to inner angle	29 „	30	28	26
Length from base to inner angle . . .	30 „	31	29	30

It will thus be seen that instead of the Brazilian individuals being "un peu plus grands avec les ailes plus larges" than those of the Cayenne ones, as stated by Boisduval, the latter are the largest in every respect, and more especially in the width of the wing.

The Cayenne female before me has the large spot of the hind wings more ovate, the black anal margin extending further towards the base than in the Brazilian specimens; the veins in this large spot, in this female and in three other specimens in the

Hopeian Collection, are concolorous, and not clothed with black scales as in the Brazilian specimens; and the marginal spots near the outer angle of the hind wings are much shorter than in the latter, whilst the small dots near the anal angle are reduced to a very few scales. In the four Hopeian specimens, with pale veins in the disk of the hind wings, the pale markings are less strongly yellow than in the Brazilian ones; and in the Amazonian male above noticed the two apical spots of the terminal macular fascia are much larger than the three following, whilst the three next are reduced to minute dots, the one close to the inner angle being as large as the 3rd to 5th. Thus neither in size, shape, nor markings can we specifically distinguish between the specimens of this species.

68. (13) CASTNIA ACRÆOIDES. *C.* alis anticis fuscis basi magis lutescentibus, medio fulvo tinctis; venis omnibus dilute nigris, strigis longitudinalibus obscurioribus inter venas fasciaque obliqua albido-ochracea e costa ultra medium, versus medium marginis apicalis extensa; alis posticis aurantiaco-rufis, venis limboque apicali intus dentato nigris, hoc serie macularum parvarum (subtus multo majorum) flavarum notato. Long. corp. unc. $1\frac{1}{4}$. Expans. alar. ant. unc. 3 lin. 1.

Castnia acræoides, Boisduval, Sp. Gén. Lép. i. pl. 14. f. 1; H. n. Lép. Hét. p. 540; Guérin, Icones R. An. Ins. pl. 83. f. 4; Griffith, An. K. Ins. pl. 53. f. 4; Gray, Trans. Ent. Soc. L. ii. p. 148; Walker, List Lep. Het. B. M. i. p. 32.

Castnia actinophorus, Kollar, Lep. Brasil., Ann. Wien. i. p. 215, pl. 12. f. 2; Walker, List Lep. B. M. i. p. 29; Boisduval, H. n. Lép. Hét. p. 520; "Gray (in Ann. Kingd.) as *C. acræoides*," Erichs. Berichte, 1839.

Hab. Brasilia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

This species bears so close a resemblance to *Acræa thalia* as often to be mistaken for it. Boisduval states that its larva feeds on certain species of Bromeliaceæ.

It is surprising that Mr. Walker should not have perceived from Kollar's excellent figure that *C. actinophorus* (placed by Walker in his section 1 of subdiv. 2) is identical with *C. acræoides* of Boisduval, which he places in his section 3. Deceived by this error, Dr. Boisduval, who, like Walker, simply repeats or translates Kollar's character of *actinophorus* *, has also given the new supposed species as distinct, placing *C. actinophorus* in the genus *Castnia*, and *C. acræoides* in that of *Orthia*.

Genus II. ORTHIA, Boisduval (pars).

Alæ magnæ, latæ; anticæ subtrigonæ, cellula discoidali aperta, loco venæ disco-cellularis tantum crassitie minuta nodiformi ramorum *b* 5* et *c* 3* indicato, ramo supero discoidali (*b* 5*) e vena postcostali pone cellulam emisso, cellula nulla accessoria postcostali: alæ posticæ cellula angusta dimidiata vena mediana connexa, cellula ordinaria aperta: abdomen alas inferiores haud postice superans. (Plate XXIX. figs. 16, 17 †.)

* "Alis anticis nigris radiis plurimis viridi-fuscis, basi fasciaque abbreviata dilute flavis: posticis luride rubris, radiis limboque nigris, hoc flavo maculato. Long. corp. lin. 9–12. Exp. alar. ant. lin. 27–33."

† In figure 16 the small lettering of the two branches *b* 5* and *c* 3* is placed too high—the former branch, which looks like the terminal branch of the postcostal vein, and the latter branch, which looks like a fourth branch of the

Having restored *C. therapon* and *acræoides* (forming Boisduval's first section of *Orthia*) to *Castnia*, and *O. augias* and *nexa* belonging to the Agaristides, I have been compelled to regard *C. pelasgus*, Fabr., and *unifasciata*, Felder (which appears to me to be identical with *pelasgus*), as a separate genus, for which I have, unwillingly, retained the name of *Orthia*.

ORTHIA PELASGUS. Alis anticis nigris bronzeo-viridi tinctis, fascia lata lutescente aut alba e medio costæ ad angulum internum extensa, medio ejus paullo latiore apiceque infero paullo incurvo ; alis posticis chalybeo-nigris, margine externo parum cærulescente. Expans. alar. ant. unc. $2\frac{1}{12}$–$2\frac{2}{3}$.

Papilio pelasgus, Fabricius, Sp. Ins. ii. p. 54 ; Ent. Syst. iii. pt. i. p. 46 ; Herbst, Ins. pl. 136. f. 6 ; Oliv. Enc. M. Ins. pl. 12. f. 5 ; Cramer, iii. pl. 202. fig. D ; Dalman, Monogr. p. 21 ; Act. Holm. 1824, p. 404 (*Castnia p.*) ; Godart, Enc. Méth. ix. p. 801 ; Gray, Trans. Ent. Soc. L. ii. p. 146 ; Walker, List Lep. Het. B. M. i. p. 22 ; Boisduval, H. n. Lép. Hét. p. 54 (*Orthia p.*).

Castnia unifasciata, Felder, Reise d. Novara, Zool. Band ii. Abth. 2, pl. 79. f. 5 (sine descr.) ; Boisduval, H. n. Lép. Hét. p. 542 (*Orthia unif.*).

H.-Sch., Samml. exot. Sch. pp. 56 and 78, gives *O. augias*, H.-S., as = *pelasgus*, F.

Except in the white colour of the fascia of the fore wings, I can see nothing to separate Dr. Felder's figure from *C. pelasgus* of Cramer.

Hab. Brasilia, Guiana, Surinam, Ega, Bolivia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

Genus III. SYNEMON, E. Doubleday. (Plate XXXIII.)

In Lord's Discov. in Australia ; Klug, Abh. k. Akad. Berlin ; Walker, List Lep. Heter. Brit. Mus. part i. ; Boisduval, H. n. Lép. Hét.

1. SYNEMON SOPHIA. Nigro-fusca, alis anticis *maris* fuscis griseo-brunneoque nebulosis, nebula obscura baseos alteraque submedia puncto albo adjecto ; venis griseis, *fœminæ* nigricantibus squamis plumbeis irroratis, fasciam subapicalem maculis nigris divisam formantibus, macula parva submedia fasciaque abbreviata costali maculari pone medium : alis posticis *maris* basi nigris macula ovali ante medium, fascia maculari pone medium maculisque submarginalibus flavis ; *fœminæ* nigris, macula magna aurantiaca baseos, fasciaque lata abbreviata transversa marginis analis, macula magna versus angulum externum, alterisque 3 vel 4 submarginalibus fulvis : alis subtus luteis, fasciis ramosis nigris. Expans. alar. antic. lin. 18–22.

Hesperia? *Sophia*, White, in Grey's Exped. Australia, App. p. 474, fig. 7 ; Doubleday, in Lord's Discov. Australia, App. i. p. 516, pl. 3. f. 5 (*Synemon Sophia*) ; Walker, List Lep. Het. B. M. i. p. 34, vii. p. 1583 ; Klug, Abhandl. kön. Akad. Berlin, 1850, p. 248, pl. annex. f. 1, 2 ; Boisduval, H. n. Lép. Hét. p. 550.

Hab. Australia, King George's Sound. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

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median vein, being separated from each other by the slenderly indicated fold running into the discoidal cell (the letters *c* 3* in the plate being improperly placed opposite to its extremity), the closing of which by the transverse disco-cellular vein is indicated by two small swellings, omitted by the engraver, opposite to each other in the middle of the wing.

2. Synemon theresa. Griseo-fusca, disco subalbido, marginibus omnibus fuscis, venis nigricanti-fuscis, in medio et ad marginem apicalem dilatatis, macula obliqua media fusca albo extus marginata fasciaque subapicali e maculis ovalibus 4 et 3 fuscescentibus inter venas obscuras formata; alis posticis fulvis basi fuscis, macula parva ante medium fulva, margine externo tenui serieque macularum submarginalium fuscis. Expans. alar. antic. lin. 18.

Synemon theresa, Doubleday, in Lord's Discov. Australia, Append. i. p. 517, pl. 3. f. 6; Walker, List Lep. Het. B. M. i. p. 35, vii. p. 84; Klug, Abhand. kön. Akad. Berlin, 1850, p. 249, pl. 3. f. 5, 6; Boisduval, H. n. Lép. Hét. p. 552.

Hab. Nova Hollandia. In Mus. Britann., Hopeiano Oxoniæ, Boisduval.

3. Synemon læta. Nigro-fusca, subtus albida; antennis albo annulatis: alis anticis fuscis, albido conspersis, maculis duabus irregularibus (una majore ante medium, altera minore pone medium subcostali) albido separatis fasciaque apicali maculari nigro-fuscis; subtus aurantiacis, fusco maculatis: posticis aurantiacis, macula basali fasciisque duabus nigris, prima arcuata, mediana, irregulari, secunda lata marginali, serie guttarum fulvarum ornata; subtus albo guttatis. Expans. alar. antic. lin. 20.

Synemon læta, Walker, List Lep. Het. B. M. i. p. 36; Boisduval, H. n. Lép. Hét. p. 553.

Hab. Nova Hollandia. In Mus. Britann.

4. Synemon selene. *S.* corpore fusco, subtus albido, abdomine supra griseo; alis anticis fusco-griseis, medio late fuscis, ante apicem fusco maculatis, fascia maculari transversa interrupta ante medium lunulaque media albis; posticis fuscis luteo trifasciatis; omnibus subtus albido-testaceis fusco maculatis: ♂ ♀. Expans. alar. ant. lin. $20\frac{1}{2}$–21.

Synemon selene, Klug, Abhandl. kön. Akad. Berlin, 1850, p. 249, pl. annex. f. 3, 4; Boisduval, H. n. Lép. Hét. p. 553; Walker, List Lep. Het. B. M. vii. p. 1584.

Hab. Nova Hollandia. In Mus. Berlin.

5. Synemon naïs. *S.* corpore griseo, subtus pallido; alis anticis supra fusco-griseis, fascia tranversa sinuata ante medium maculaque media griseis: posticis luteis fascia transversa medio profunde sinuata baseos, maculis ad marginem margineque fuscis, omnibus subtus luteis fusco-maculatis ♀. Expans. alar. antic. $12\frac{1}{2}$ lin.

Synemon naïs, Klug, Abhandl. kön. Akad. Berlin, 1850, p. 250, pl. annex. f. 7; Walker, List Lep. Het. B. M. vii. p. 1584; Boisduval, H. n. Lép. Hét. p. 553.

Hab. Nova Hollandia. In Mus. Berlin.

6. Synemon catocaloides. Nigro-cinerea, subtus alba; antennis albo annulatis; alis anticis squamis plurimis pallide cinereis, basi maculis tribus alteraque versus medium marginis interni nigris, macula magna pone medium nigro-ferruginea, fascia arcuata guttarum albarum strigisque quatuor brevibus subapicalibus nigris, margine apicali fusco intus crenulato; alis posticis læte rufis, fascia parva media

transversa versus marginem analem, costa late et irregulariter nigra, limboque apicali nigro guttis nonnullis subapicalibus rufis. Expans. alar. antic. lin. 22.

The above description is made from the type specimen in the British Museum.

Synemon catocaloides, Walker, List Lep. Het. B. M. xxxi. p. 44; Boisduval, H. n. Lép. Hét. p. 551.

Hab. Swan River. In Mus. Britann.

7. Synemon parthenoides. Alis anticis brunneis obscurius nebulosis, fascia lata submaculari e medio costæ fere ad angulum internum extensa, venis divisa, altera breviore bifida literam v simulante, inter precedentem et apicem, albis; alis posticis nigris, macula rotunda aurantiaca prope basin, seriebus duabus macularum ejusdem coloris inter medium et apicem, interiore in medio interrupta, altera versus angulum externum abbreviata. Expans. alar. antic. fere unc. 2.

Synemon parthenoides, Felder, Reise d. Novara, Zool. Bd. ii. Abth. 2, tab. 79. f. 7, 8; Boisduval, H. n. Lép. Hét. p. 550, pl. 11. fig. 5.

Hab. Nov. Hollandia. In Mus. Boisduval.

8. Synemon mopsa. Nigro-fusca; alis subtus fulvescentibus, maculis testaceis, anticis supra pallide fuscis vittis duabus albis basalibus, gutta alba ad apicem areolæ discoidalis, pone medium fascia transversa maculari alba seriem macularum fuscarum includente, margine apicali subgriseo; alis posticis pallide castaneo-fuscis, nebulis nonnullis submarginalibus fuscescentibus. Expans. alar. antic. 15 lin.

Synemon mopsa, Doubleday, in Lord's Discov. Australia, App. i. p. 518, pl. 3. f. 7; Walker, List Lep. Het. B. M. i. p. 35; Boisduval, H. n. Lép. Hét. p. 552.

S. theresa, var., Klug, Abh. kön. Akad. Berl. 1850, p. 249.

Hab. South Australia. In Mus. Britann., Boisduval.

9. Synemon icaria. Alis anticis griseo-albido nebulosis, basi obscuriore, fascia e medio costæ ad marginem internum (ibique dilatata) fusca, fasciis duabus inter medium et apicem sinuatis obliquis; interna versus angulum internum seriem lunularum formante, externa (subapicali) abbreviata, lunulis submarginalibus fuscis: alis posticis flavo-aurantiacis, macula magna basali marginis abdominalis cum striga undata submedia e margine costali fere connexa nigris, limbo apicali angusto nigro, aurantiaco guttato. Expans. alar. antic. unc. $1\frac{1}{2}$.

Synemon icaria, Felder, Reise d. Novara, zool. Th. Bd. ii. Abth. 2, pl. 79. f. 6; Boisduval, H. n. Lép. Hét. p. 554.

Hab. Nova Hollandia, Swan River. In Mus. Boisduval.

10. Synemon plana. (Plate XXXIII. fig. 8.) Fusca, abdomine pallido depresso: alis anticis fusco-badiis, macula ovali inter basin et medium albido cincta, strigaque tenui conica postice adjecta, macula indistincta pallida ad apicem cellulæ discoidalis maculisque duabus majoribus inter medium et apicem nigricantibus, lineis albidis marginatis; margine apicali tenui nigro, intus serie punctorum albidorum notato:

alis posticis læte fulvis, guttis 3 et 1 pone medium margineque apicali tenui nigris: alis subtus albis; margine tenui apicali omnium fusco, squamis luteis irrorato; anticis prope apicem punctis duobus, posticis cum 4 pone medium nigris. Expans. alar. antic. unc. $1\frac{1}{3}$.

Synemon plana, Walker, List Lep. Het. B. M. i. 37, Boisduval, H. n. Lép. Hét. p. 554.

Hab. Nova Hollandia, Hunter River. In Mus. Britan., et Hopeiano Oxoniæ.

11. SYNEMON DIRECTA. (Plate XXXIII. fig. 6.) Fusca, alis anticis concoloribus, fascia recta alba, e medio costæ fere ad angulum internum extensa, lunula abbreviata inter medium et apicem minus distincta, spatio inter fascias plagam ovalem fusco-nigram formante; alis posticis nigris, macula curvata inter basin et medium, fascia maculari pone medium valde sinuata guttisque nonnullis ovalibus submarginalibus læte aurantiacis; alis subtus rufo-fulvis nigro maculatis. Expans. alar. unc. 2.

Hab. Australasia. In Mus. Hopeiano Oxoniæ.

12. SYNEMON NUPTA. (Plate XXXIII. fig. 7.) Plumbeo-cinerea, macula oblique transversa ad medium cellulæ discoidalis extus squamis albis marginata, fascia media obliqua pone medium e costa ad medium disci extensa, altera abbreviata costali inter hanc fasciam et apicem strigaque subapicali e maculis conoideis nigris formata; alis posticis nigris extus cyaneo nitidis, plaga magna basali trigona, maculis duabus pone medium prope marginem internum alteraque prope angulum externum sanguineis: alis anticis subtus nigris, fascia abbreviata media costali alteraque subapicali rufis; posticis nigris guttis tribus albis discoidalibus in triangulum dispositis, alteraque parva rufa inter duas posticas. Expans. alar. unc. $1\frac{3}{4}$.

Hab. Australasia occidentalis. In Mus. Hopeiano Oxoniæ.

13. SYNEMON NOTHA. (Plate XXXIII. fig. 10.) Fusca, alis anticis cinereis, nigro variis, macula magna indistincta inter medium disci et marginem posticum alteraque subcostali, inter medium et apicem, in strigam punctorum nigrorum postice ad marginem internum extensam terminante, strigaque maculari submarginali, margineque ipso tenui nigricantibus; alis posticis læte aurantiacis, basi fascia media (ad costam paullo dilatata) limboque tenui marginali nigris, hoc serie guttarum aurantiacarum notato: alis subtus rufo-fulvis, anticis striga interna basali fasciaque brevi (pone medium costæ) extus guttis albidis notata; alis posticis macula ante medium, fascia media limboque nigris, omnibus guttis albidis postice notatis. Expans. alar. antic. unc. $1\frac{1}{6}$.

Hab. Australasia, Albany (*Brewer*). In Mus. Hopeiano Oxoniæ.

14. SYNEMON OBSCURELLA. (Plate XXXIII. fig. 9.) Fusco-nigricans, alis anticis striga tenui abbreviata obliqua media alba, lunulisque duabus inter medium et apicem pallide luteis (externa obscuriore); alis posticis nigricantibus, gutta parva lutea inter basin et medium, dimidio apicali fulvo-luteo, striga undata subapicali, in medio interrupta, fuscescente: alis anticis subtus basi nigris, dimidio apicali fulvo, macula

rotunda versus costam nigra; alis posticis nigris, ultra medium fulvis striga subundata submarginali fusca. Expans. alar. antic. unc. $1\frac{1}{6}$.

Hab. Australasia. In Mus. Hopeiano Oxoniæ.

15. Synemon hesperioides. (Plate XXXIII. fig. 11.) Fusca, alis anticis versus basin squamis albidis variis, macula parva conoidea ad apicem cellulæ discoidalis, maculis duabus (lineis tenuibus marginatis) strigaque apicali lunularum parvarum albidis; alis posticis brunneis, pone medium striga fere indistincta macularum nigrarum, margine apicali fusco: alis subtus brunneis, anticis in medio et ad apicem, posticis in medio, serie irregulari circularum margineque apicali squamis albido-sericeis irroratis. Expans. alar. antic. unc. $1\frac{1}{3}$.

Synemon hesperioides, Felder, Reise d. Novara, zool. Th. Bd. ii. Abth. 2, pl. 82. fig. 12; Boisduval, H. n. Lép. Hét. p. 555 (regarded as one of the Hesperiidæ).

Hab. Nova Hollandia. In Mus. Hopeiano Oxoniæ.

16. Synemon vagans. (Plate XXXIII. fig. 12.) Alis anticis fusco-cinereis, fascia transversa nigra ante medium e costa, postice acuminata, marginem posticum vix attingente, fascia altera abbreviata subcostali venis divisa nigra pone medium, extus pallidius marginata, guttis tribus ovalibus nigris subapicalibus alterisque quinque submarginalibus margineque ipso tenui nigris; alis posticis nigris, fasciis duabus arcuatis aurantiacis: alis subtus fulvo-luteis, anticis macula irregulari media alteraque pone medium subcostalibus nigris, apice albido nigroque vario; alis posticis magis fulvescentibus, medio circulo fere integro nigro notato, limbo tenui nigro, fulvo guttato. Expans. alar. antic. lin. 19.

Hab. Nova Hollandia (*Strange*). In Mus. Hopeiano Oxoniæ.

Obs. Hæc species cum sequente a reliquis differunt alis anticis angustioribus, margine antico in medio parum concavo-sinuato nec convexo.

17. Synemon gratiosa. (Plate XXXIII. fig. 13.) Alis anticis fuscis, dimidio apicali pallidiore, macula irregulari transverse obliqua submedia, intus squamis pallidioribus irrorata, macula altera subcostali conoidea pone medium nigra, serieque submarginali punctorum nigrorum (in medio interrupta), margine ipso tenui obscuro; alis posticis aurantiacis, macula parva nigra versus costam et pone medium posita limboque tenui nigro, in medio aurantiaco guttato: alis anticis subtus obscure fulvis apice albidis, maculis duabus mediis duabusque inter medium et apicem fuscis, margine fusco, albido guttato; alis posticis fulvis, maculis tribus mediis, externa majore et ad costam extensa, limbo nigro, extus albido guttato. Expans. alar. antic. unc. $1\frac{1}{3}$.

Hab. Nova Hollandia. In Mus. Hopeiano Oxoniæ.

Genus IV. Tascina. (Plate XXXIII. fig. 5.)

Insectum orientale *Castnias* Americæ meridionalis mundo antiquo repræsentans, cum quibus antennis necnon numero venarum alarum congruit, his autem aliter dispositis; palpis exiguis, lingua spirali

obsoleta, alisque anticis apice acuminatis e *Castniis* facile distinguitur. *Caput* magnum; *oculi* maximi, laterales, antice approximati, spatio angusto inter se separati; palpi tenuissimi, breves, erecti, ad medium frontis vix attingentes, articulo penultimo longo, ultimo minuto acuto. Vestigium nullum linguæ spiralis detexi. *Antennæ* circiter 50-articulatæ, clavatæ, articulis primis 32 filiformibus; apice acuto, parum incurvato, fasciculo parvo setarum terminato. *Thorax* robustus. *Abdomen* mediocre. *Tibiæ* anticæ breves, in medio calcari armatæ. *Tarsi* antici elongati, pulvillo mediocri, unguibus acutis, curvatis, simplicibus, setisque duabus elongatis apicalibus instructi. *Alæ* sat magnæ, anticæ trigonæ, margine apicali fere recto, apice acuminato producto; posticæ ovali-trigonæ, tenaculo (seta crassa curvata prope basin costæ) anticis ligatæ: anticæ vena postcostali paullo ante medium alæ bifurcata, ramo antico ramulos tres emittente, quorum tertius (*b* 3) apicem alæ attingit, ramo postico etiam tres emittente; vena mediana ramulos quatuor emittente, quorum superior (seu discocellularis, *c* 3*) cum inferiore (*b* 5*) venæ postcostalis venula nulla transversa conjungitur: alæ posticæ vena postcostali bifida, ramulis liberis et cum venulis medianæ haud conjunctis, vena mediana e basi bipartita, singula parte etiam bifida, inde rami 4 mediani; vena anali et subanali simplicibus.

TASCINA ORIENTALIS. (Plate XXXIII. fig. 5.) Alis anticis saturate fuscis, fascia fere recta obliqua pone medium costæ fere ad angulum internum extensa albida, alis posticis obscure aurantiaco-rufis, limbo lato fusco; corpore nigricante, abdominis apice rufescente. Long. corp. unc. $1\frac{1}{4}$. Expans. alar. unc. $3\frac{1}{2}$.

Hab. Singapore (*Wallace*). In Mus. Hopeiano Oxoniæ.

Genus V. HECATESIA. (Plate XXXIII. figs. 1—4.)

Hecatesia, Boisduval, Monogr. Zygæn. p. 11; Walker, List Lep. Het. B. M. i. p. 54.

Corpus sat crassum, abdomine in maribus barbato. *Caput* parvum, ocellis duobus instructum. *Antennæ* elongatæ, cylindricæ, pone medium in maribus fusiformes vel subfusiformes, in fœminis minus incrassatæ. *Palpi* ultra medium faciei assurgentes, dense hirsuti, articulis tribus, primo crassiore curvato, tertio dimidium secundi paullo superante. *Lingua* elongata spiralis. *Thorax* valde hirtus. *Alæ*, insecto quiescente, tectiformes, breves; anticæ in maribus spatio magno reniformi vitreo transverse striolato, prope costam, instructæ, hac in medio in tuberculum corneum elongatum dilatata, ramos venæ postcostalis dislocante, scil. ramo primo curvato marginem posticum areæ vitreæ formante, ramis 2, 3 et 4 subapicalibus ad basin inter se æque distantibus, vena quinta prope basin areæ vitreæ emissa, vena cellulam discoidalem claudente fere indistincta at curvata; vena mediana 4-ramosa, ramis tribus ultimis ad basin valde approximatis: alæ anticæ in fœmina area vitrea carentes; cellula magna discoidali, apice fere recta transversa, cellulaque parva angusta subcostali distincta, ad apicem ejus ramos tres emittente, medio bifido: alæ posticæ cellula discoidali ad trientem alæ extensa, ibique transverse et indistincte desinens, vena 3 *c* * e medio ejus emissa. *Pedes* satis graciles, tibiis barbatis; tibiæ anticæ calcari forti medio instructæ.

This curious Australian genus was first described by Boisduval, and placed by him in the family Zygænidæ, but removed to the Agaristides in his recent memoir on that tribe published in the 'Revue de Zoologie,' 1874, in which position, between *Eusemia* and *Ægocera*, it was placed by Walker. It appears to me, however, to be more nearly allied to *Castnia* by means of the genus *Synemon*, agreeing with *Castnia* in the possession of the small narrow subcostal cell formed by the branches of the postcostal vein, the fourth of which arises from the third at some distance beyond the extremity of this small cell, in the normally formed wing of the female. Until, however, we become acquainted with

the transformations of *Hecatesia*, and have learned whether the larva is xylophagous, radicivorous, or phyllophagous, and the pupa armed with rows of recurved spines or simple, we cannot decide on the true relations of the group.

1. Hecatesia fenestrata. (Plate XXXIII. fig. 1.) *Fœm.* thorace nigro-fusco, albo trivittato; alis anticis nigro-fuscis, fasciis duabus transversis parum macularibus, prima ante, secunda pone medium alarum; alis posticis luteo-fulvis, limbo lato punctoque medio subcostali nigris; abdomine fulvo-luteo, maris fusco-barbato, serie dorsali punctorum nigrorum. Expans. alar. antic. lin. 14–18.

Obs. The female, here figured for the first time, differs from the male only in wanting the vitreous spot on the fore wings.

Hecatesia fenestrata, Boisduval, Monogr. Zygæn. p. 11, pl. 1. f. 2; Voy. de l'Astrolabe, Ent. p. 171; Spec. Gén. Lépid. i. pl. 10 B. fig. 7; Mon. Agaristides, Rev. Zool. 1874, and sep. issue, p. 23; Chenu, Encycl. Hist. Nat. Pap. 236, f. 403; White, in Grey's Journ. Exped. Austral. Append. p. 475, pl. 8. f. 2; Walker, List Hep. Het. B. M. i. 54.

Hab. Nov. Hollandia. In Mus. Britann., Hopeiano, &c.

2. Hecatesia thyridion. Thorace fusco-nigro, albo trivittato; alis anticis fusco-nigris, fasciis tribus transversis macularibus guttisque nonnullis subapicalibus albis; area vitrea in maribus angustiore quam in præcedente specie; alis posticis aurantiacis, limbo lato albo guttato punctoque subcostali mediano nigris; abdomine supra auran-tiaco, maculis nigris dorsalibus et lateralibus nigris; subtus albo; palpis et pedibus nigris, albo variis; antennis in utroque sexu pergracilibus. Expans. alar. antic. lin. 17.

Hecatesia thyridion, Feisthamel, in Voy. de la Favorite, v. Suppl. p. 19, pl. 5. fig. 1; White, Append. Capt. Grey's Journ. Exped. Austral. p. 475, pl. 8. f. 1 (m. and f.); Boisduval, Mon. Agaristides, p. 24; Walker, List Lep. Het. B. M. i. p. 55.

Hab. Nova Hollandia, Albany (*Brewer*), Swan River (*Curtis*), West Australia (*Damell*). In Mus. Britann., Hopeiano Oxoniæ.

3. Hecatesia exultans. (Plate XXXIII. figs. 2*m*, 3*f*.) Atra: capite et thorace flavo guttatis; abdomine serie dorsali punctorum fulvorum, lateribus fulvo nigroque variis: alis anticis nigris, maris margine antico in medio dilatato, pone medium profunde emarginato, fœminæ forma ordinaria, in utroque sexu guttis numerosis flavis et griseis, fascias septem irregulares maculares alternatim flavas et griseas formantibus; fimbriis omnibus griseis nigro maculatis: alis posticis aurantiacis, limbo lato maculaque trigona subcostali mediana nigris: capite subtus orbitu oculorum et basi palporum flavo hirtis: pedibus nigris, tibiis fulvo hirtis, apicibus et tarsorum artic. 1 et 2 apicibus albis; calcaribus longis nigris: abdomine pone medium maculis sex transversis albis (per paria dispositis): alis anticis subtus absque squamis griseis; posticis guttis nonnullis albis in limbo nigro. Expans. alar. antic. circ. unc. 1.

Hecatesia exultans, Walker, List Lep. Het. B. M. i. p. 58; Boisduval, Mon. Agarist. p. 24.

Obs. The typical specimen of this species, described by Mr. Walker as a male, is a female, wanting the vitreous spot of the fore wings, which exists in the true male, the wings being of a remarkable form in the latter sex.

Hab. Swan River, Nov. Holl. (*Diggles*). In Mus. Britann., Hopeiano Oxoniæ.

The insects described in the remaining portion of this memoir have been regarded by various authors as belonging to the group of which *Castnia* is the type—from which, however, they are entirely distinct, belonging to other Heterocerous groups.

Genus Othria, Westw.

Dr. Boisduval's species of *Orthia, O. augias* and *O. nexa,* must be referred to the Agaristides, the veining of their wings agreeing exactly with that of *Agarista.* I propose to place them therefore as a separate genus of Agaristides, under the name of *Othria.* From *Ægocera* they are distinguished by their geographical distribution being confined to South America.

In *O. augias* (Plate XXIX. figs. 18, 19) the fore wings have a small postcostal cell, the branches *b* 2 and *b* 3 arising far beyond the cell, as does also *b* 5, whilst *b* 5* springs from a little branch from the middle of the hinder margin of the postcostal cell, and the discoidal cell of the hind wings is imperfectly closed by a very slender arched discocellular vein or, rather, fold.

1. Othria augias. "Ailes noires sans aucun reflet; les ailes supérieures, dont les nervures forment des stries grisâtres longitudinales sont traversées, du milieu de la côte à l'angle interne, par une bande d'un jaune d'ocre, très-droite. Ailes inférieures sans taches, avec les nervures un peu plus claires." Exp. alar. ant. unc. $2\frac{1}{6}$.

Orthia augias (Boisduval, MS.), Herr.-Schäffer, Aussereur. Schmett. f. 18; Boisduval, H. n. Lép. Hét. p. 542 (incorrectly referred in his text, but with doubt, to *Orthia pelasgus*).

Hab. Brasilia (Rio Janeiro), Minas Geraes (*Rogers*), Brasilia occidentalis (*Rogers*). In Mus. Hopeiano Oxoniæ, Boisduval.

2. Othria nexa. "Elle a le port et la taille de *O. augias*; ses quatre ailes sont d'un noir terne, sans aucun reflet, avec l'extrémité des nervures grisâtre comme chez *augias*. Les ailes supérieures sont traversées, du milieu de la côte à l'angle interne, par une bande d'un jaune d'ocre très-pale un peu recourbée à son extrémité comme dans *pelasgus*; les ailes inférieures sont sans taches. Cette espèce pourrait bien être une variété femelle d'*augias*. Elle ne diffère que par la bande des ailes supérieures notablement plus pâle, formant un tant soit peu le crochet à son extrémité inférieure, et par le dessous des ailes supérieures dont la côte est piquée de gris."

Hab. —— ? In Mus. Boisduval.

Orthia nexa, Boisduval, H. n. Lép. Hét. p. 543.

3. Othria amazonica, Westw. Alis brevioribus, latioribus, anticis subtrigonis; atra, alis fascia fulva e medio costæ fere ad angulum analem extensa, postice nonnihil incurva, alis subtus omnino concoloribus. Expans. alar. ant. unc. 1, lin. 11.

Hab. Amazonia. In Mus. Hopeiano Oxoniæ.

Had not Dr. Boisduval described an insect as the probable female of *O. augias*, with grey veins at the extremity of the fore wings as in the male, I should have been induced to regard this Amazonian insect as the female of *O. augias*. The veins of its wings are arranged exactly as in *O. augias*.

4. Othria Lindigii. Atra, collo, abdominis lateribus, alis anticis, macula magna basali trigona alteraque transversa ovali pone medium alisque posticis (limbo lato nigro excepto) fulvis, subtus magis stramineis. Expans. alar. $2\frac{1}{12}$ unc.

Agarista Lindigii, Felder, Lep. Voy. Novara, pl. 107. f. 6.

Hab. Villa Nova Amazoniæ. In Mus. Hopeiano Oxoniæ.

Obs. Individua e Nova Granada et Ecuadoria allata paullo minora (exp. unc. $1\frac{5}{6}$) maculisque fulvis minoribus.

Obs. Individuum majus (exp. unc. $2\frac{5}{12}$) maculis albidis in alis anticis, alisque posticis pallidioribus, limbo nigro angustiore.

In this species the second branch of the postcostal vein arises near the upper end of the small accessory postcostal cell. In the hind wings the veins are arranged as in *O. augias*.

5. Othria amalthea. Atra, annulo colli, lateribus abdominis, puncto trigono in medio fasciaque tenui abbreviata pone medium alarum anticarum, alis posticis (limbo lato nigro excepto) fulvis. Expans. alar. antic. unc. $1\frac{11}{12}$.

Ægocera amalthea, Dalman, Analecta Entom. 49. 24; Walker, Cat. Lep. Het. B. M. i. p. 58.

Hab. Brasilia, Peru, Bogota? In Mus. Hopeiano Oxoniæ.

In this species the fore wings are more elongated, and the second branch of the postcostal vein of the fore wings arises exactly at the tip of the small accessory postcostal cell.

6. Othria columbina. Tota atra, fascia obliqua parum flexuosa e medio costæ fere ad angulum analem extensa, fulva, postice parum latiore. Expans. alar. antic. unc. $2\frac{1}{12}$.

Hab. Columbia (*Chesterton*), In Mus. Hopeiano Oxoniæ.

The wing-veins are arranged as in *O. amalthea*.

7. Othria ecuadorina. Corpore cum collo nigris, alis latioribus atris; anticis fascia tenui recta obliqua pone medium nec marginem costalem nec angulum analem attingente, maculaque magna ovali discoidali alarum posticarum aurantiacis, margine anali nigro. Expans. alar. antic. unc. 2.

Hab. Ecuador. In Mus. Hopeiano Oxoniæ.

This species agrees with the preceding in its black and orange colours; but it wants the small accessory postcostal cell, and the branch *b* 2 arises at half the distance between the discoidal cell and the tip of the wing, followed at a short distance by *b* 3, whilst *b* 5 arises from the hind edge of the main stem, slightly in advance of the origin of *b* 2. (See Plate XXIX. fig. 23.) In other respects the veins agree with *O. augias*.

Several other species, evidently congeneric with the above, are figured by Dr. Felder in the 137th plate of his work on the Lepidoptera of the 'Novara' voyage, under the names of *Agarista Doleschallii*, *A. Semperi*, *A. Moorei*, *A. alethe*, and *A. Batesii*.

The following insects must also be removed from their proximity to *Castnia* and referred to the Agaristides.

Genus Damias, Boisduval, Voy. Astrol. pt. i. p. 259.

The insects of this genus are black and orange like the *Othriæ*, but are natives of the Eastern Archipelago.

1. Damias elegans, Boisduval, Voy. Astrol. pt. i. Lép. 259. 1.
   Hab. New Guinea.

2. Damias melaxantha, Boisduval, Voy. Astrol. pt. i. Lép. 260. 2.
Cleïs posticalis, Guérin, Voy. Duperrey, Atlas Ins. pl. 18. f. 5.
   Hab. Port Praslin, New Ireland.

3. Damias dichroa, Boisduval, Voy. Astrol. pt. i. Lép. 260. 3.
   Hab. Offack and Bourou.

4. Damias varia, Walker, List Lep. Het. Brit. Mus. i. p. 15.
   Hab. Richmond River, Australia.
   I cannot distinguish this insect specifically from an insect collected in Batchian by Mr. Wallace, now in the Hopeian Museum at Oxford, described by Mr. Walker under the name of *Burgena transducta*.

Genus Burgena, Walker.

Burgena transducta, Walker. (See Plate XXIX. fig. 21.)
The fore wings are narrow; but in the veining of its wings it agrees with *Agarista*, the small accessory postcostal cell emitting only one branch at its extremity, the branch *b* 2 arising at a considerable distance beyond the cell, whilst *b* 5 arises from the hinder edge of the stem close beyond the accessory cell.

Genus Hespagarista, Walker.

Hespagarista interjecta, Walker, List Lep. Het. B. M. i. p. 14.
Brought by Mr. Angus from Caffraria, and figured by him in his fine work on the Kaffirs, pl. 30. f. 10. Agrees with the *Othriæ* in general form and antennæ; but the wings are much more maculated, the extremity of the body is tufted, and the veining of the

fore wings differs with respect to the small postcostal cell, which emits one branch, *b* 5, at its extremity, whilst the main stem of the postcostal vein arises from its anterior edge near the extremity, *b* 2 arising at a little distance beyond the cell, followed at a very short distance by *b* 3, *b* 4 extending to the extremity of the wing. (See Plate XXIX. fig. 22.)

Genus Rothia.

Another group of species, also closely allied to the preceding, are natives of Madagascar, and have the small postcostal cell very narrow (thus differing from the typical *Eusemiæ*, in which the small cell is wanting, Pl. XXIX. f. 20). They also have the branch *b* 2 arising from its upper extremity, and running free nearly to the tip of the wing, *b* 3 arising halfway between the cell and the tip of the wing, whilst *b* 5 arises close beyond the extremity of the postcostal cell; such at least is their arrangement in *C. pales* and *simyra*. They may advantageously be formed into a separate genus, to which the name of *Rothia* may be applied. Here belong

1. Rothia pales.

Agarista pales, Boisduval, in Guérin, Icon. R. An. pl. 83. f. 1; Faun. Ent. Madag. pl. 10. f. 1, 2.
Eusemia pales, Boisduval, Mon. Agarist. p. 75. no. 35; Walker, List Lep. Het. B. M. i. p. 54.

Hab. Vicinity of Tananariva, Madagascar. In Mus. Hopeiano Oxoniæ.

2. Rothia eriopis.

Agarista eriopis, Boisduval, in Herrich-Schäffer, Auss. Schm. f. 31; Mon. Agaristides, p. 71 (*Eusemia er.*).

3. Rothia agrius.

Agarista agrius, Boisduval, in Herrich-Schäffer, *op. cit.* f. 33; Mon. Agaristides, p. 72 (*Eusemia agr.*).

4. Rothia pedasus.

Agarista pedasus, Boisduval, in Herrich-Schäffer, *op. cit.* f. 32 (nec 34 ut in Bdv.); Mon. Agaristides, p. 73 (*Eusemia ped.*).

5. Rothia simyra. Atra, capite et collo flavo-guttatis: alis anticis elongatis nigris, gutta minima humerali fasciaque transversa parum sinuata (postice paullo latiore) e medio costæ fere ad angulum analem extensa flavescentibus; alis posticis atris, fimbria ad angulum externum alba; corpore infra, pedibus, et abdominis lateribus lutescentibus; alis posticis subtus dimidio basali rufo. Expans. alar. unc. $2\frac{3}{4}$.

Hab. Madagascar. In Mus. Hopeiano Oxoniæ.

The arrangement of the wing-veins of this species was noticed above.

Genus Ægiale, Felder. (Wien. ent. Mon. iv. 110, 1860.)

Type *Ægiale Kollari* (*Castnia hesperiaris*, Walker, List Lep. Het. B. M. pt. vii. p. 1583).

This Mexican insect is no other than the large Hesperian butterfly first mentioned by me (in the 'Genera of Diurnal Lepidoptera,' p. 506) as remarkable for wanting spurs to

the hind tibiæ*, and which was subsequently formed into a separate genus by Dr. Felder, under the name of *Ægiale Kollari*. The arrangement of its wing-veins (Plate XXIX. fig. 25), and, indeed, the whole structure of the insect, are entirely Hesperideous.

Specimens are in the Hopeian collection at Oxford, presented to me by Mr. Coffin.

Genus Megathymus.

Megathymus, Scudder, Syst. Revis. Amer. Butterflies, p. 12 (Salem, 1872).

The type of this genus is the large butterfly figured by Boisduval and Leconte (Iconogr. Lépid. Amér. Septentr. pl. 70), under the name of *Eudamus*? *yuccæ*, by whom also the larva and pupa were represented, but in an unsatisfactory manner.

Walker, List Lep. Het. B. M. pt. 7, p. 1583, gave a short and very insufficient description of this insect under the name of *Castnia yuccæ*, which, he says, "connects the *Castniæ* with the *Hesperiæ*. Had he been aware of the figures of the preparatory states given in Leconte and Boisduval's work, he would have seen that in all respects (and most especially in the larva form) this is a true Hesperian. In its wing-veins it agrees with *Ægiale Kollari*, except that the angulated vein closing the discoidal cell is very slender.

Since the present memoir was presented to the Linnean Society, an admirable memoir on this insect, with figures of its various characters in the preparatory and perfect states, has been published by Dr. Charles V. Riley, in the 'Transactions of the Academy of Sciences of St. Louis,' vol. iii. January, 1876, and subsequently introduced into the 'Eighth Annual Report on the Noxious, Beneficial, and other Insects of the State of Missouri,' by the same author, who has arrived at the opinion that the insect is a large-bodied Hesperian, and that it has no real relation with *Castnia*.

DESCRIPTION OF THE PLATES.

Plate XXVIII.

Details of Castnia.

Fig. 1. Larva of *C. eudesmia*.
Fig. 2. Pupa of *C. eudesmia*, dorsal view.
Fig. 3. Pupa of *C. eudesmia*, with one of the pterothecæ raised up, showing the fore wing and its marks.
Fig. 4. Cocoon of *C. eudesmia*.
Fig. 5. Venation of fore and hind wings of *C. papilionaris*.
Fig. 6. Venation of fore wing of *C. cacica*.
Fig. 6 *a*. Venation of hind wing of *C. cacica*.
Fig. 7. Characteristic portion of the veins of fore wing of *C. mygdon*.
Fig. 8. " " " of *C. Boisduvallii*.

* In *H. paniscus* the two spines in the middle of the two hind tibiæ are wanting (H.-Schäffer, Syst. Bearb. pl. vi. f. 17).

Fig. 9. Fore wing of *C. veraguana*.
Fig. 10. Characteristic portion of the veins of fore wing of *C. ecuadoria*.
Fig. 11. „ „ of fore wing of *C. cochrus*
Fig. 11 *a*. „ „ of hind wing of *C. cochrus*.
Fig. 12. „ „ of fore wing of *C. truxilla*.
Fig. 13. „ „ of fore wing of *C. icarus*.
Fig. 14. „ „ of fore wing of *C. Hübneri*.
Fig. 14 *a*. „ „ of hind wing of *C. Hübneri*.
Fig. 15. „ „ of fore wing of *C. Latreillei*.

Note.—The same numbers and small letters are used in the above figures of the venation of the wings, as well as in the following Plates, to express the corresponding parts in the different species.

a, costal vein; *b*, postcostal vein with its five branches, *b* 1, *b* 2, *b* 3, *b* 4, and *b* 5, together with *b* 5*, the upper disco-cellular vein, which is here regarded as portion of the postcostal system; *c*, median vein and its branches, *c* 1, *c* 2, and *c* 3, together with *c* 3*, the lower disco-cellular vein, which is here regarded as portion of the median system; *y* and *z* represent the bases of *b* 5* and *c* 3* within the discoidal cell; *d*, the postmedian vein; *pc.c*, postcostal cell; *dc*, discoidal cell; *dc**, hinder division of discoidal cell; *pmc*, premedian cell.

Plate XXIX.

Fig. 1. Characteristic part of the hind wing of *Castnia juturna*.
Fig. 2. „ „ fore wing of *C. Marcel-Serresii* male.
Fig. 3. „ „ hind wing of ditto ♂, and annexed partial diagram of ♀.
Fig. 4. „ „ fore wing *C. chremes*, male.
Fig. 5. „ „ hind wing of *C. chremes*, male and female.
Fig. 6. „ „ fore wing of *C. diva*.
Fig. 7. „ „ hind wing of ditto.
Fig. 8. Fore wing of *C. cononia*.
Fig. 9. Characteristic part of the fore wing of *C. linus*.
Fig. 10. „ „ hind wing of ditto.
Fig. 11. „ „ fore wing of *C. mimica*.
Fig. 12. „ „ hind wing of ditto.
Fig. 13. Fore wing of *C. acreoides*.
Fig. 14. Characteristic part of hind wing of ditto.
Fig. 15. „ „ hind wing of *C. therapon*.
Fig. 16. Fore wing of *Orthia pelasgus*.
Fig. 17. Hind wing of ditto.
Fig. 18. Fore wing of *Othria augias*.
Fig. 19. Hind wing of ditto.
Fig. 20. Fore wing of *Eusemia*.
Fig. 21. Characteristic part of fore wing of *Burgena transducta*.
Fig. 22. Fore wing of *Hespagarista interjecta*.
Fig. 23. Characteristic part of the fore wing of *Othria ecuadorina*.
Fig. 24. „ „ fore wing of *Agarista Lindigii*.
Fig. 25. Fore wing of *Ægiale Kollari*.
Fig. 26. Fore wing of *Euschemon Rafflesii*.
Fig. 27. Fore wing of *Hepialus humili*, fem.
Fig. 28. Hind wing of ditto.

Plate XXX.

Fig. 1. *Castnia veraguana.*
2. *C. ardalus,* var.
3. *C. phalaris.*
4. *Castnia amycus,* var.
5. *C. Dalmanni,* ♀ from Brit. Mus.
6. *C. papagaya.*

Plate XXXI.

Fig. 1. *Castnia clitarcha,* ♂.
2. *C. clitarcha,* ♀.
3. *C. papilionaris.*
4. *Castnia satrapes,* var.
5. *C. satrapes,* var.

Plate XXXII.

Fig. 1. *C.* (*Gazera*) *Salvina.*
2. *C.* (*G.*) *cycna.*
3. *C.* (*G.*) *truxilla.*
4. *C.* (*G.*) *cratina.*
5. *C.* (*G.*) *cononia.*
6. *C.* (*G.*) *ecuadoria.*
7. *C.* (*G.*) *mimica.*

Plate XXXIII.

Fig. 1. *Hecatesia fenestrata,* ♀; 1 *a*. Head and antenna of male; 1 *b*. Palpus; 1 *c*. Palpus denuded; 1 *d*. Fore leg; 1 *e*. Fore wing of male.
2. *H. exultans* ♂.
3. *H. exultans* ♀.
4. Wings of *H. thyridion.*
5. *Tascina orientalis*; 5 *a*. Head, seen in front; 5 *b*. Ditto, sideways; 5 *c*. Extremity of antenna; 5 *d*. Fore legs; 5 *e*. Extremity of fore tarsus; 5 *f*. Hind leg; 5 *g*. Venation of fore wing; 5 *h*. Ditto hind wing.

Fig. 6. *Synemon directa.*
7. *S. nupta.*
8. *S. plana.*
9. *S. obscurella.*
10. *Synemon notha.*
11. *S. hesperioides.*
12. *S. vagans*; 12 *a*. Venation of wing of same.
13. *S. gratiosa.*

Fig. 14 *a*. Fore wing of *Synemon Sophia*; 14 *b*. Hind wing of ditto; 14 *c*. Head and base of antenna; 14 *d*. Palpus of *S. Sophia*; 14 *e*. Palpus, denuded, of ditto; 14 *f*. Fore leg of ditto; 14 *g*. Middle leg of ditto; 14 *h*. Hind leg of ditto.

J.O.Westwood del.

Fig. 6

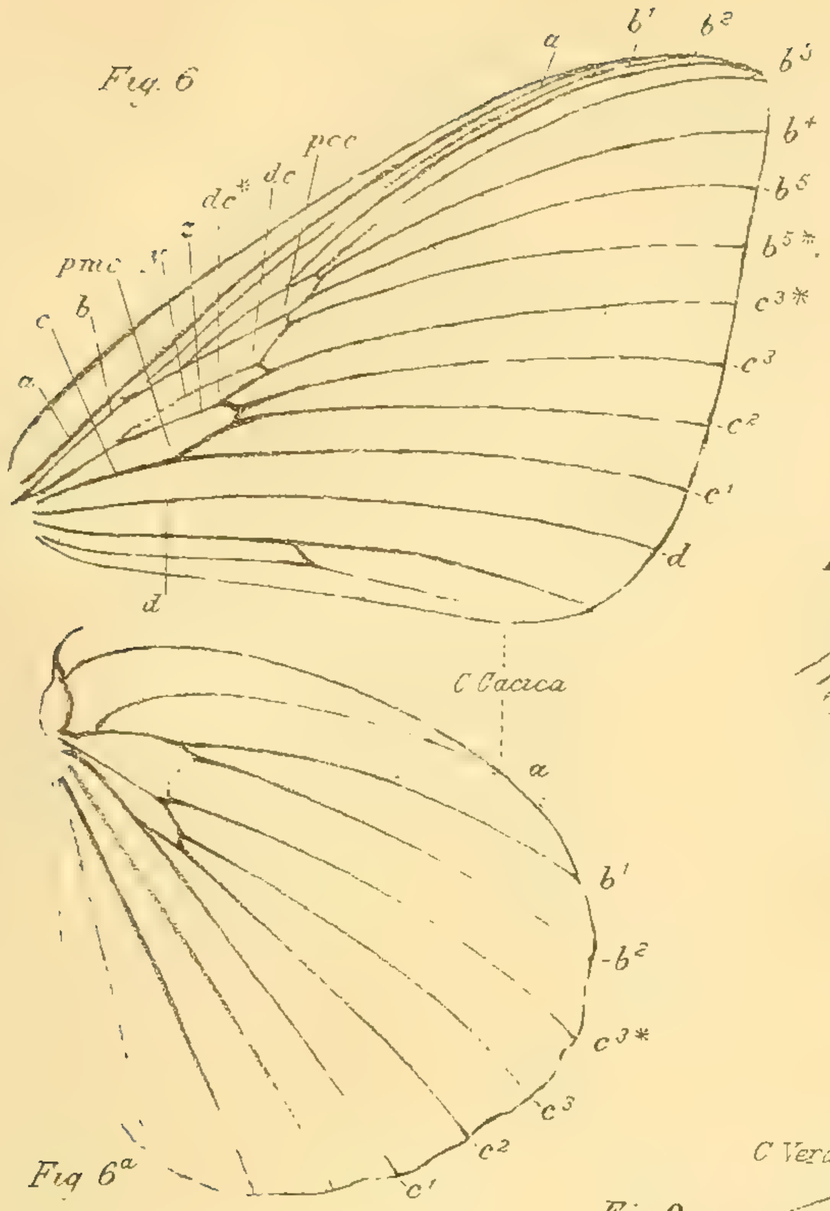


Fig 6ª

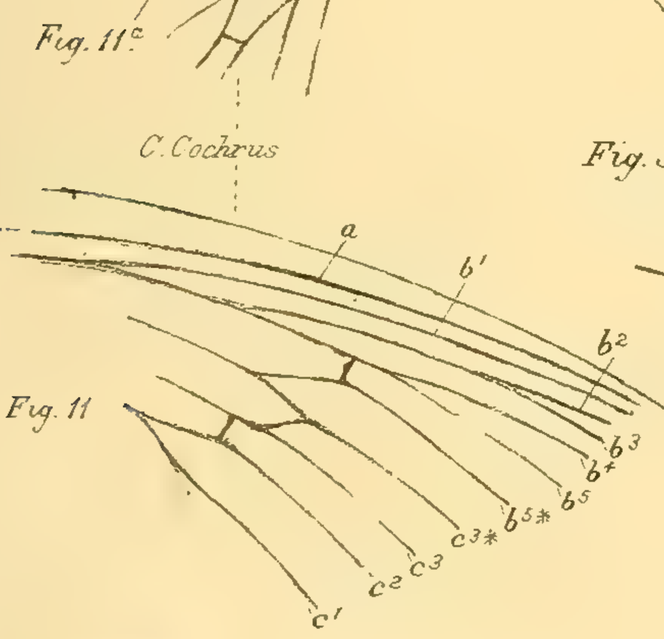


Fig. 11ª

Fig. 11

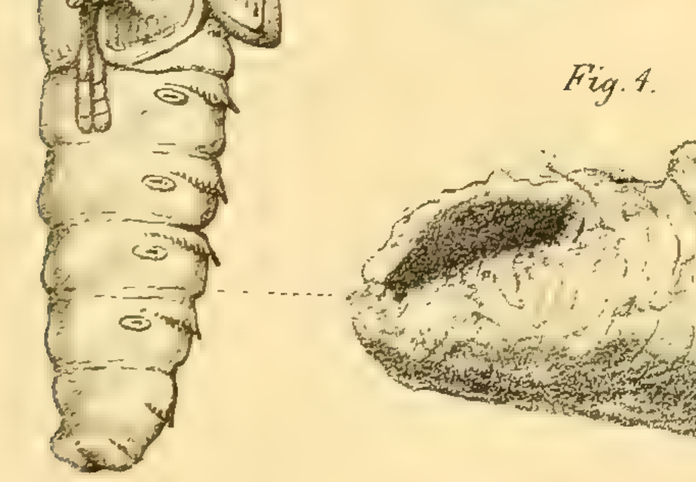


Fig. 3.

Fig. 1.

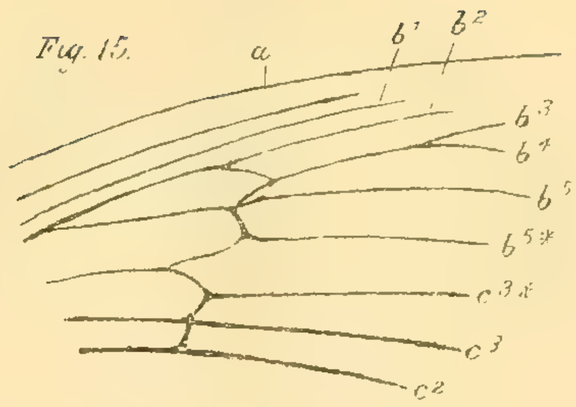
Fig. 4.

C Berjeau lith

VENATION & DEVELOPEMENT OF CASTNIA.

Hanhart imp

Fig. 15.



C Mygdon

Fig. 7.

Fig 8

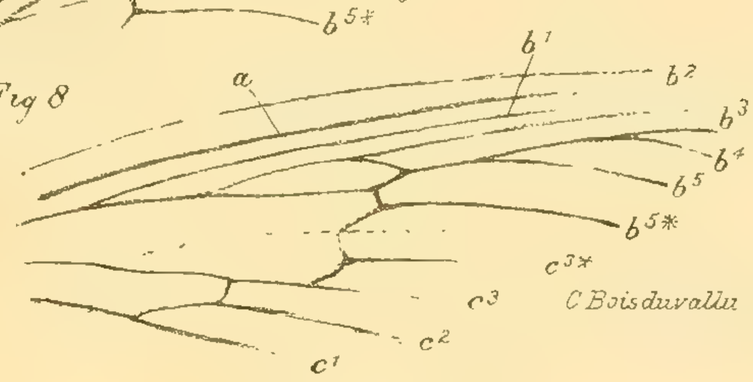


Fig.9.

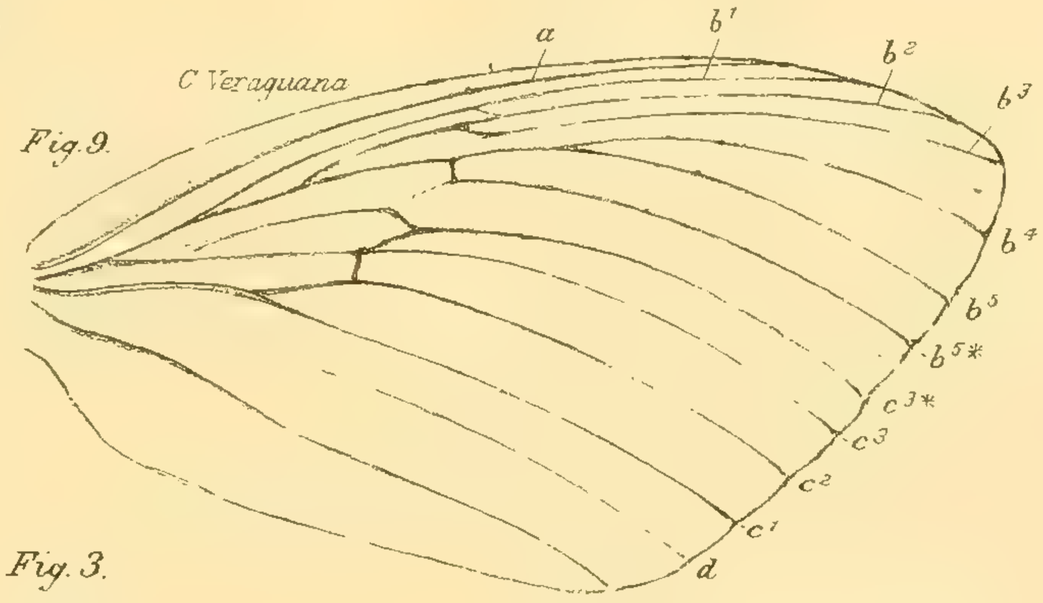
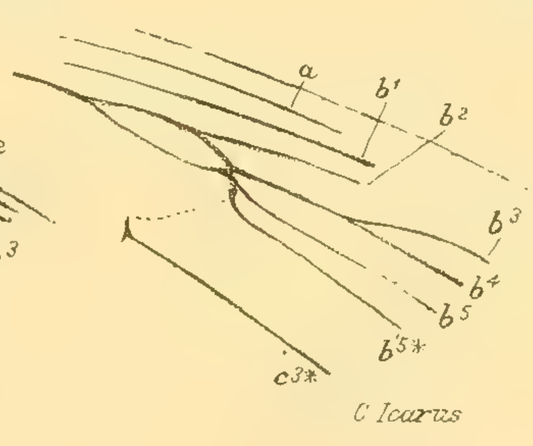


Fig. 3.



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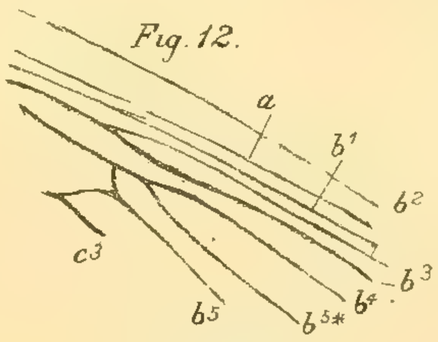
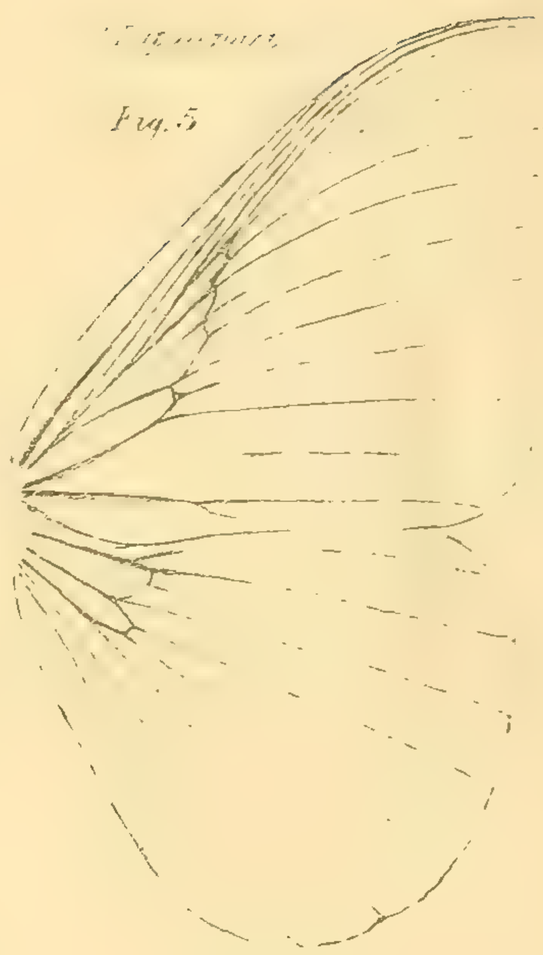


Fig. 5



C Eguadorio

Fig. 10.

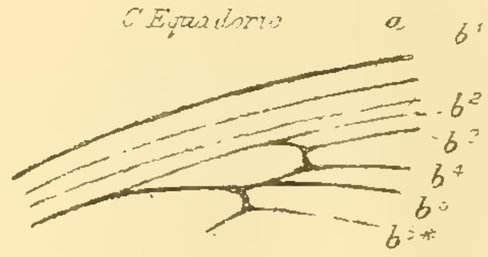


Fig.14ª

Fig. 14.

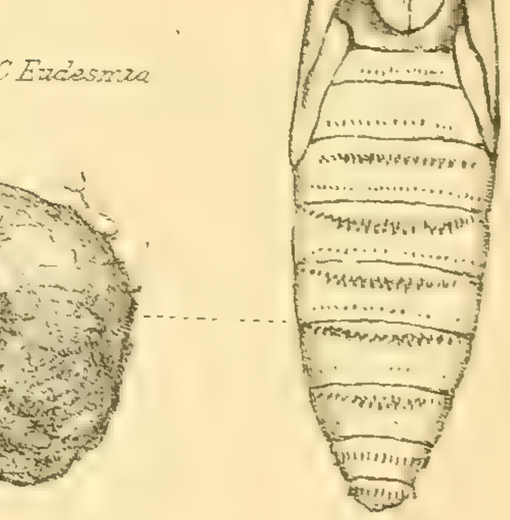


Fig. 2.

Fig 1

C. Juturna.

Fig 2

C Marcel Serenus

Fig 3

C Chremes

Fig 4

Fig 5

Fig 7

C Diva

Fig 8

C Cononia.

C Mimica

Fig.6.

C Linus

Fig 9

Fig.11.

Fig 10

Fig.16

C.Pelasgus.

Fig 12.

Fig 13.

C. Acraeoides

Fig 14.

Fig 15.

C Taevapon

Fig.17.

Fig 18.

Mara Fugax

Fig.20.

Fig 19

Fig.22.

Eusemia.

Burgena Transducta.

Fig.21.

Hespagarista interjecta

Fig 23.

C Equadorina

Fig.26.

Euschemon Rafflesii.

Fig 27

Fig.24.

Agarista Lindigii.

Hepialus Humuli

Fig 28.

Fig 25

Ægiale Kollari

C.Berjeau lith

Hanhart imp

VENATION, SPECIES OF CASTNIÀ &c.

C Amycus

Fig. 2.

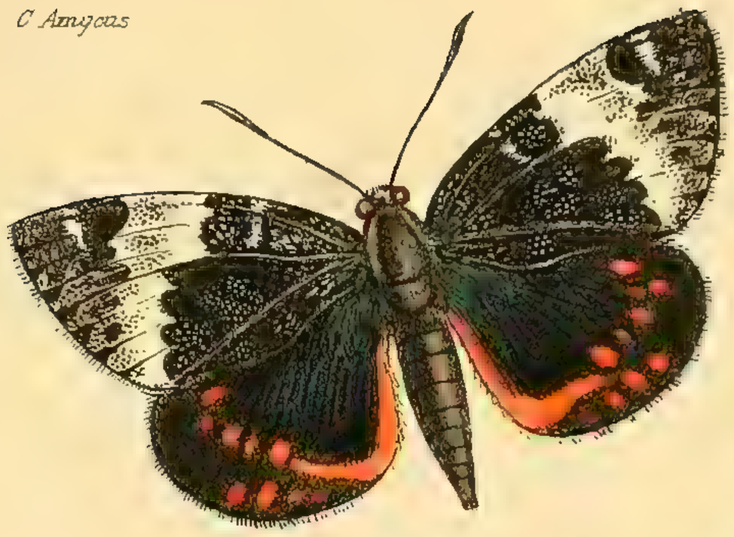


Fig. 4.

C Phalaris

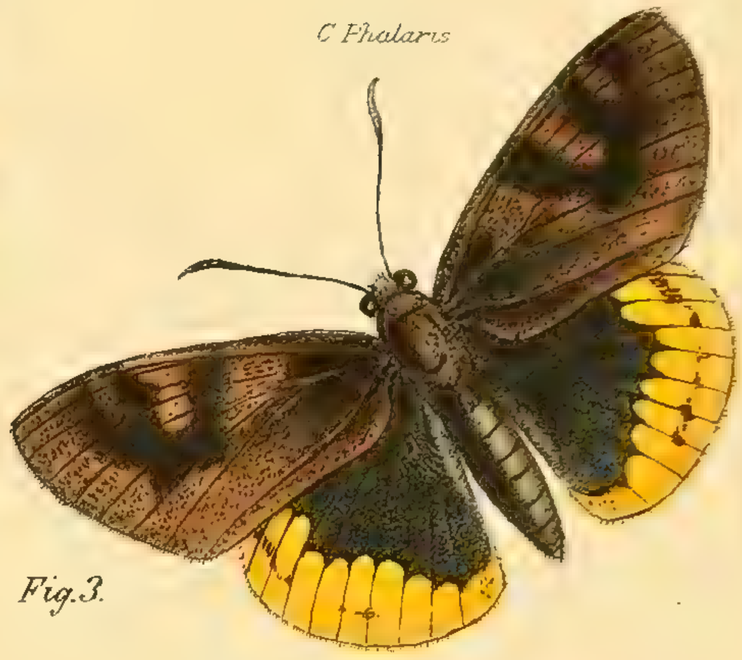
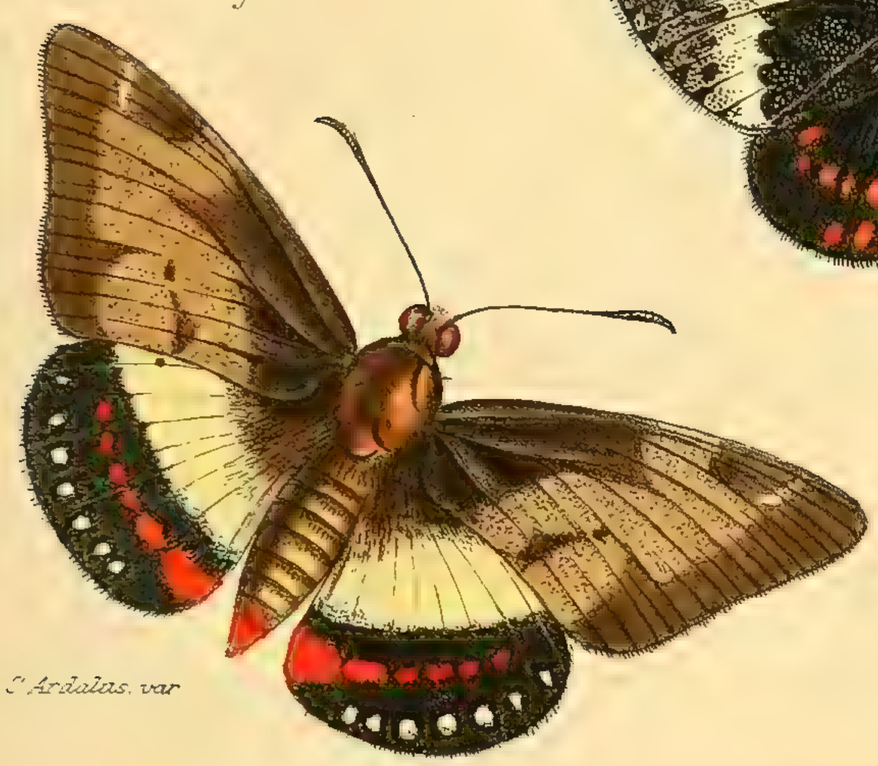


Fig. 3.



C Ardalas. var

C Veraguana.

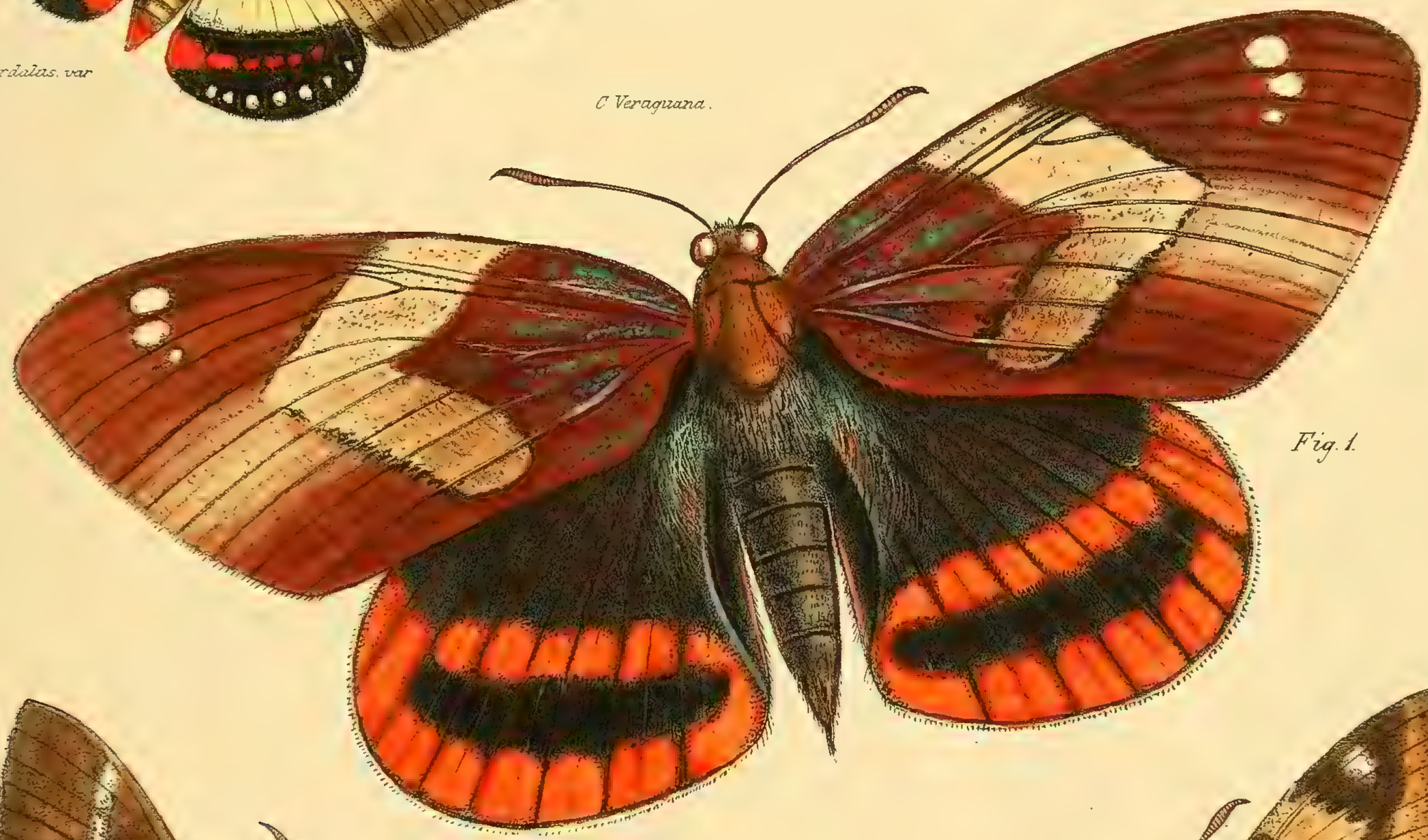
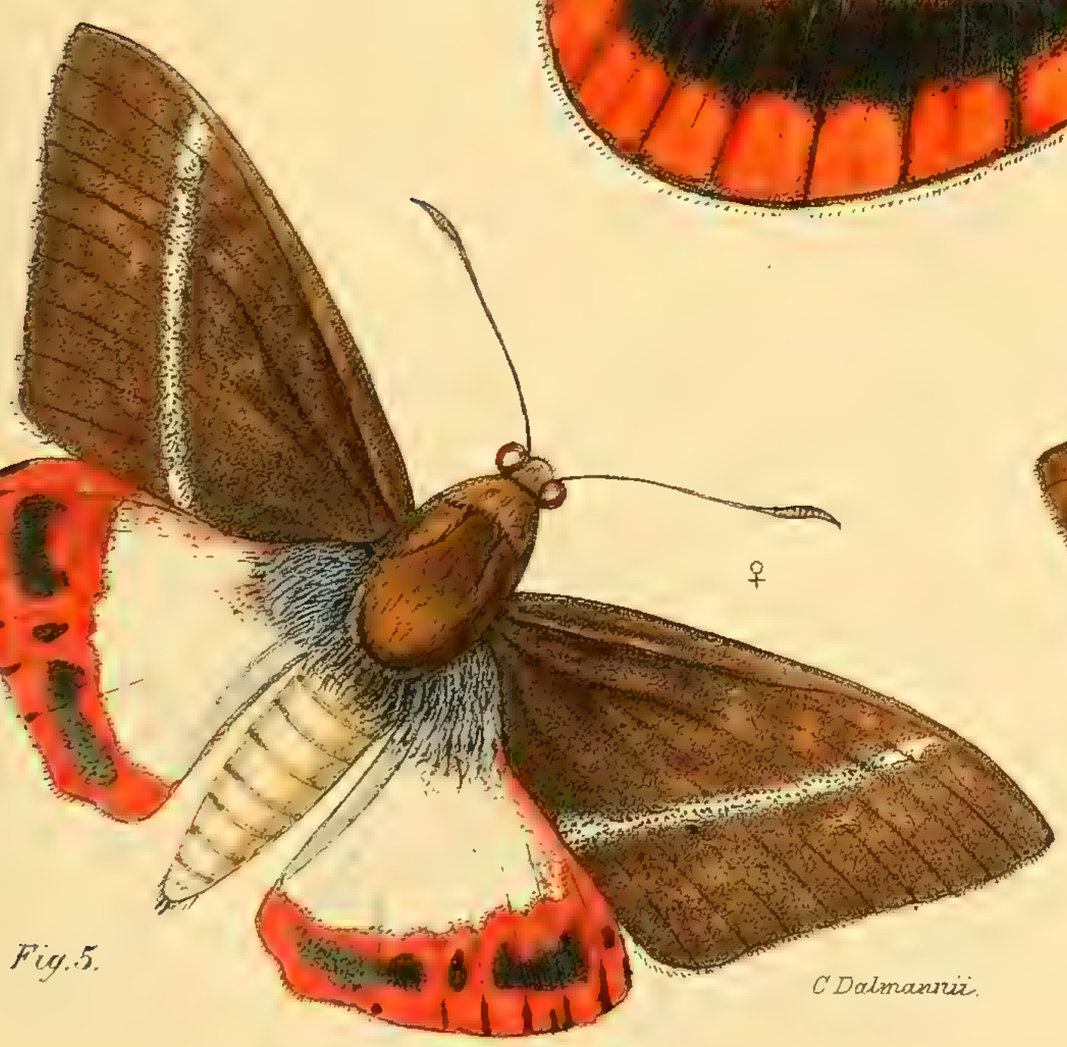


Fig. 1.



♀

Fig. 5.

C Dalmannii.

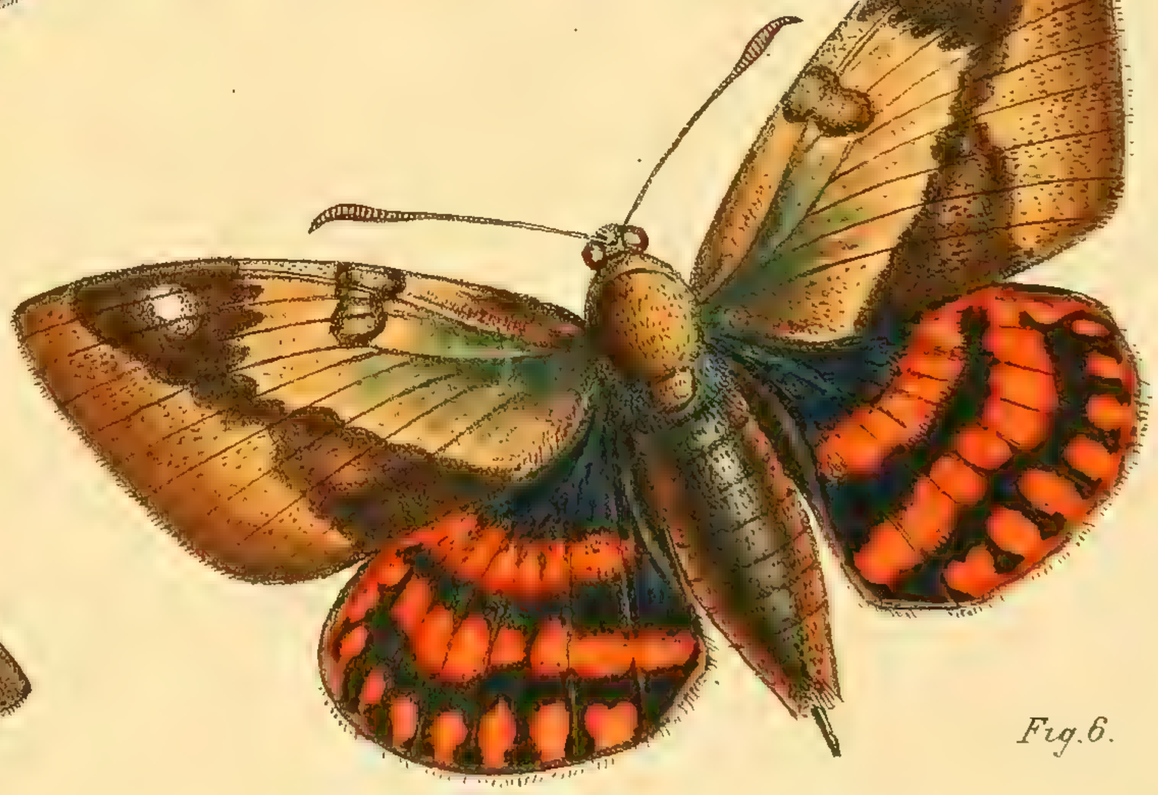


Fig. 6.

C. Papagaya

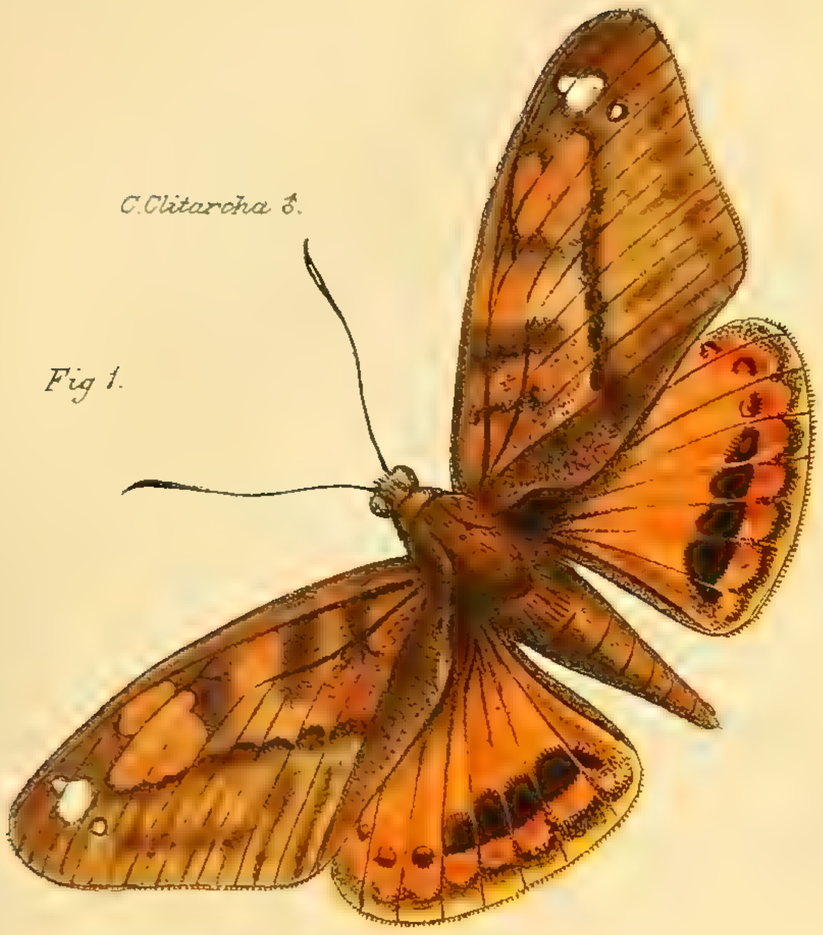
C. Berjeau lith

NEW SPECIES OF CASTNIA.

Hanhart imp

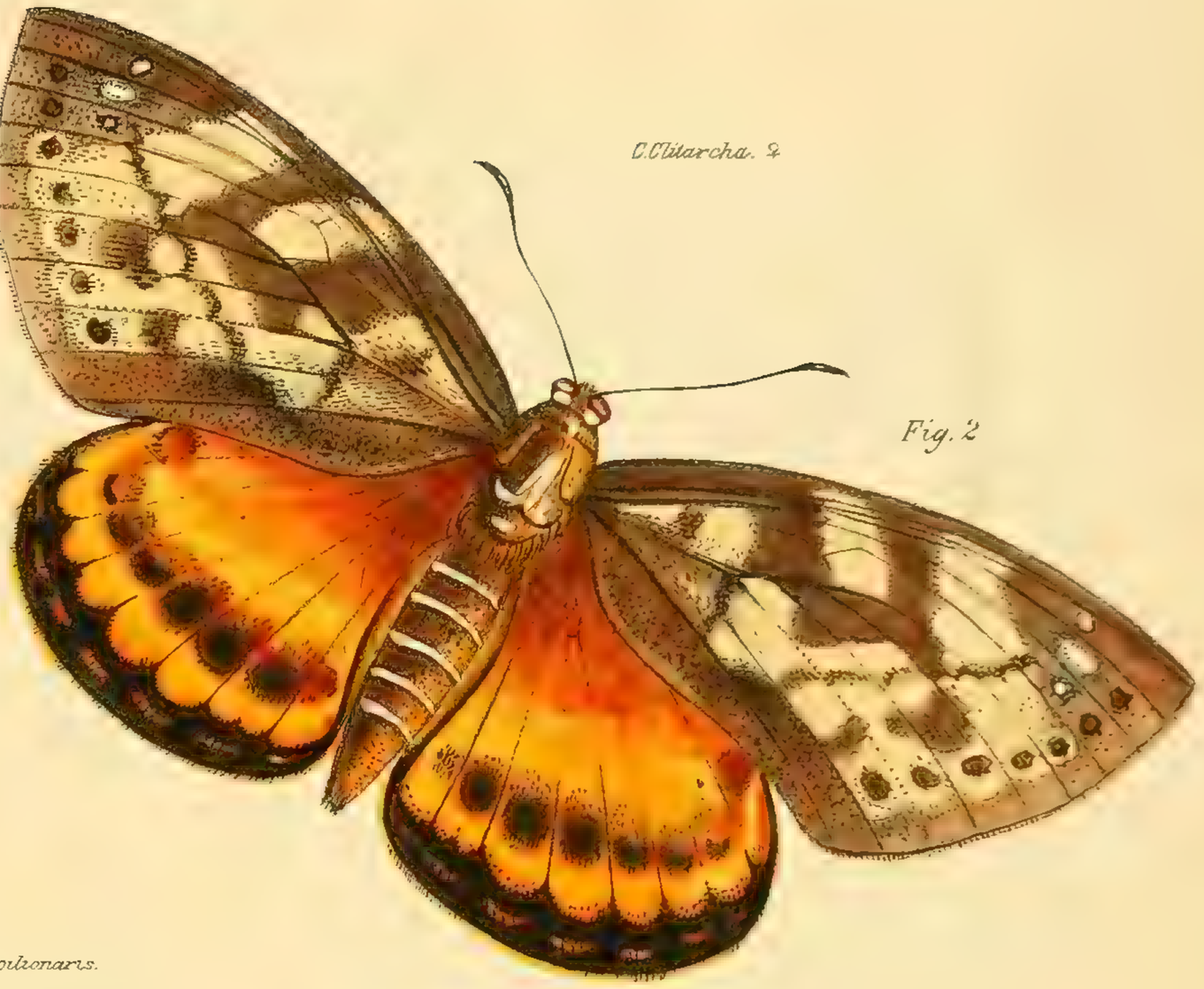
C. Clitarcha ♂.

Fig 1.



C. Clitarcha. ♀

Fig. 2



C. Papilionaris.

Fig. 3.

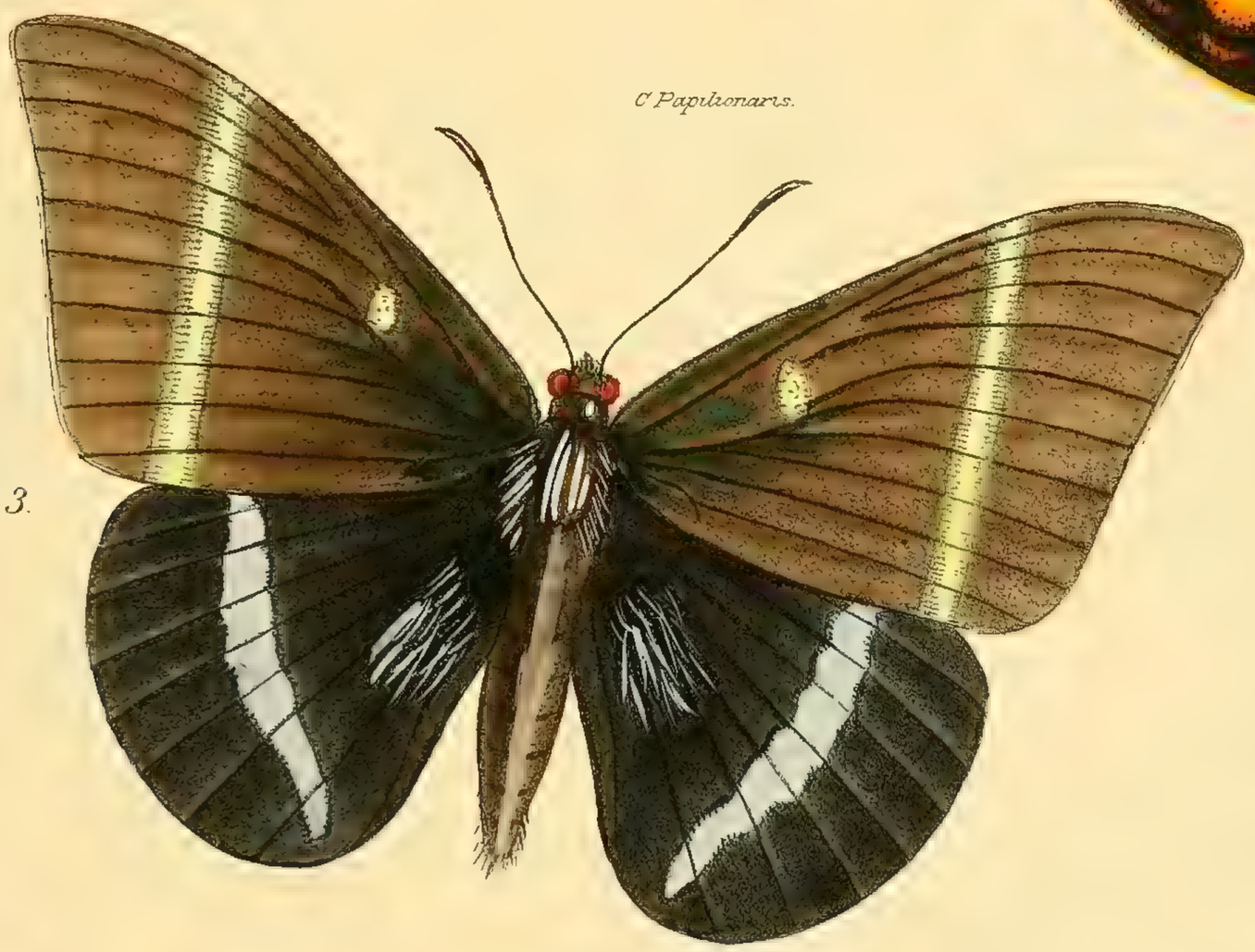
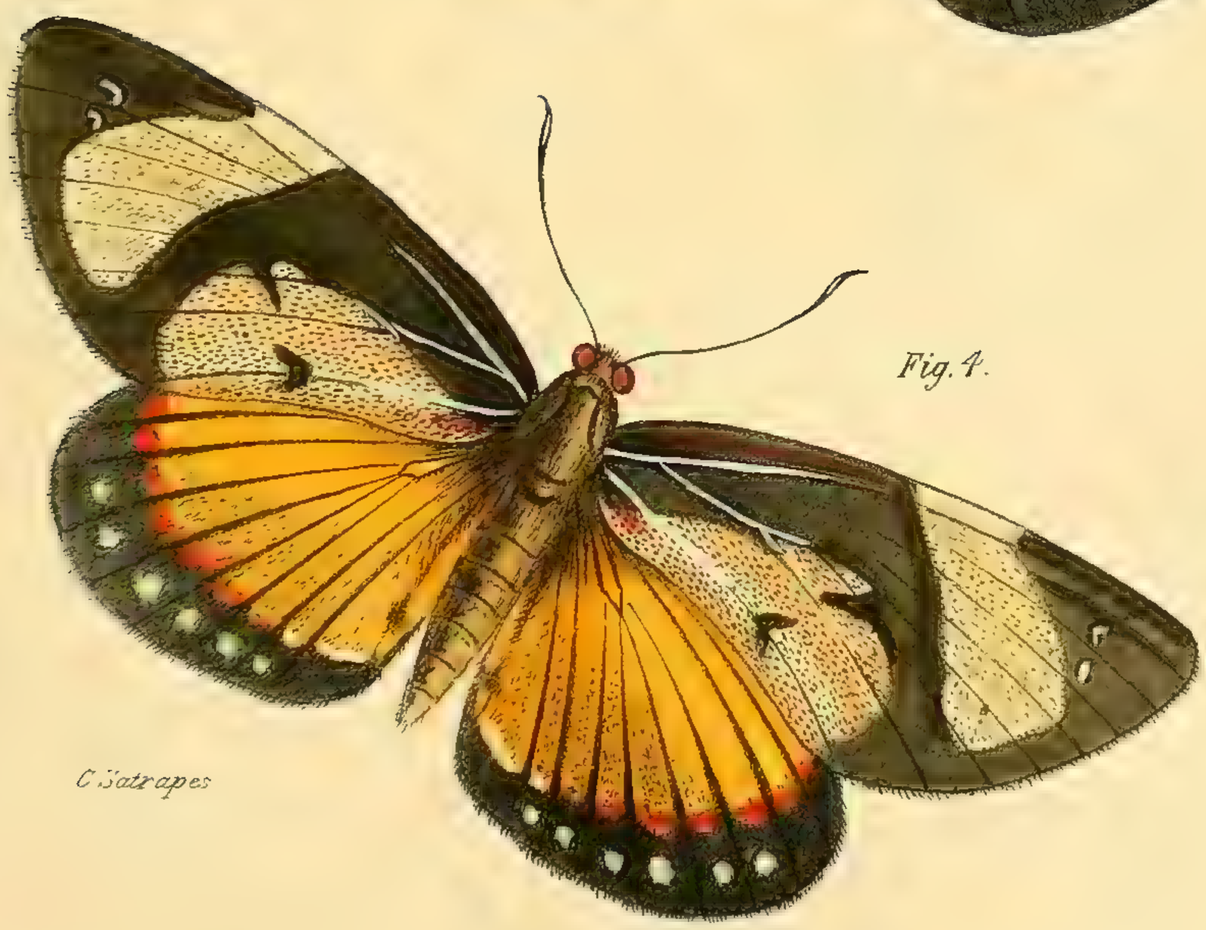
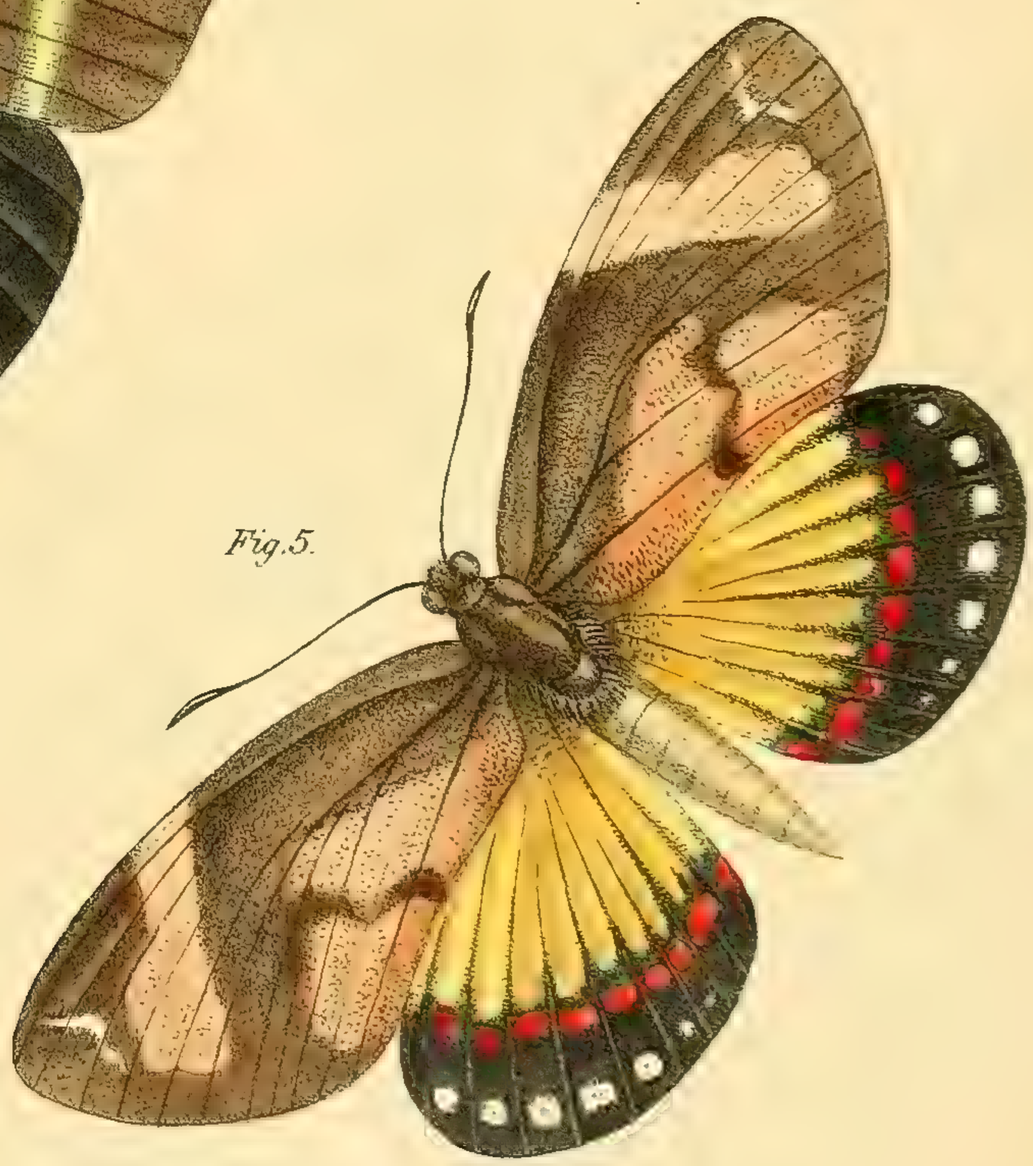


Fig. 4.



C. Satrapes

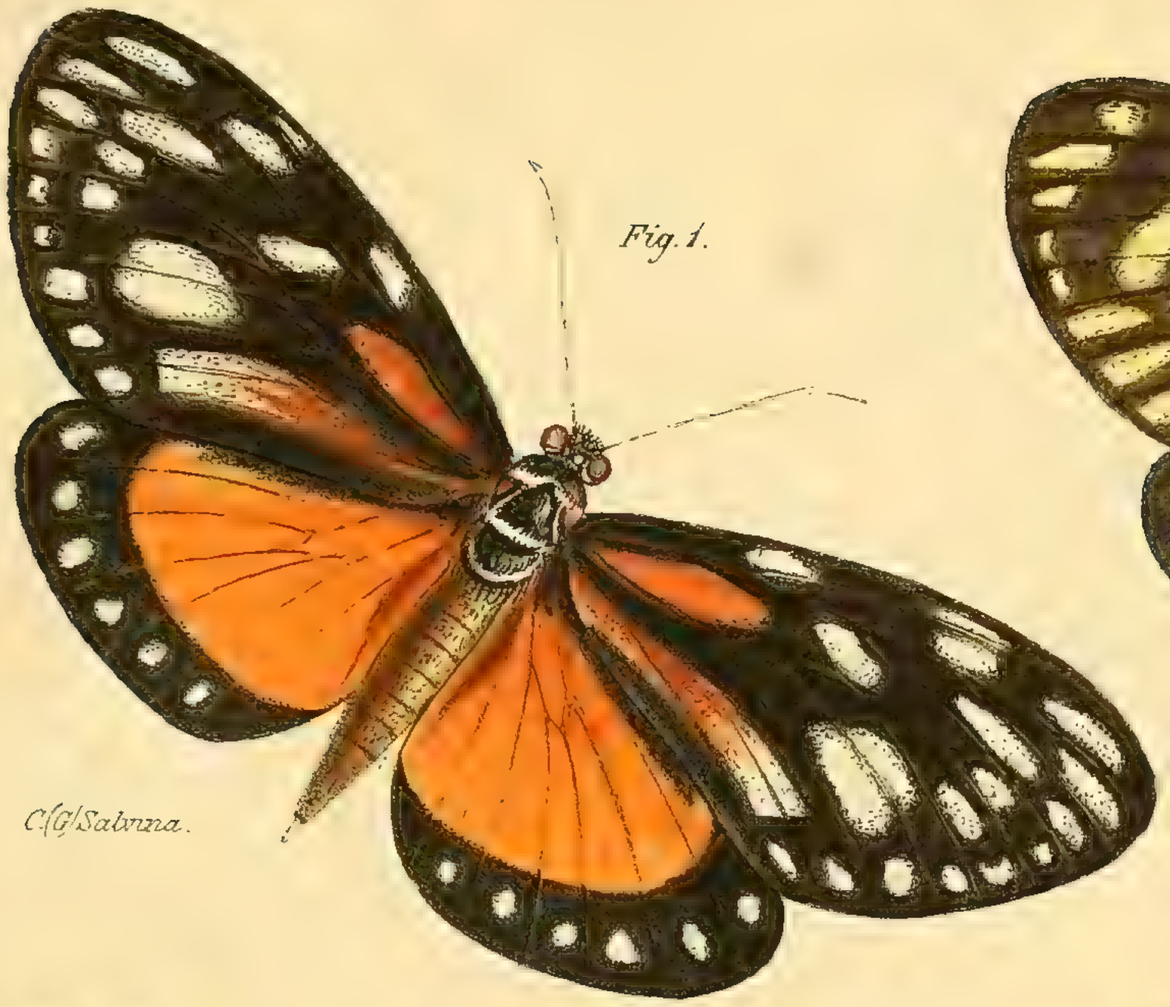
Fig.5.



C. Satrapes, var.

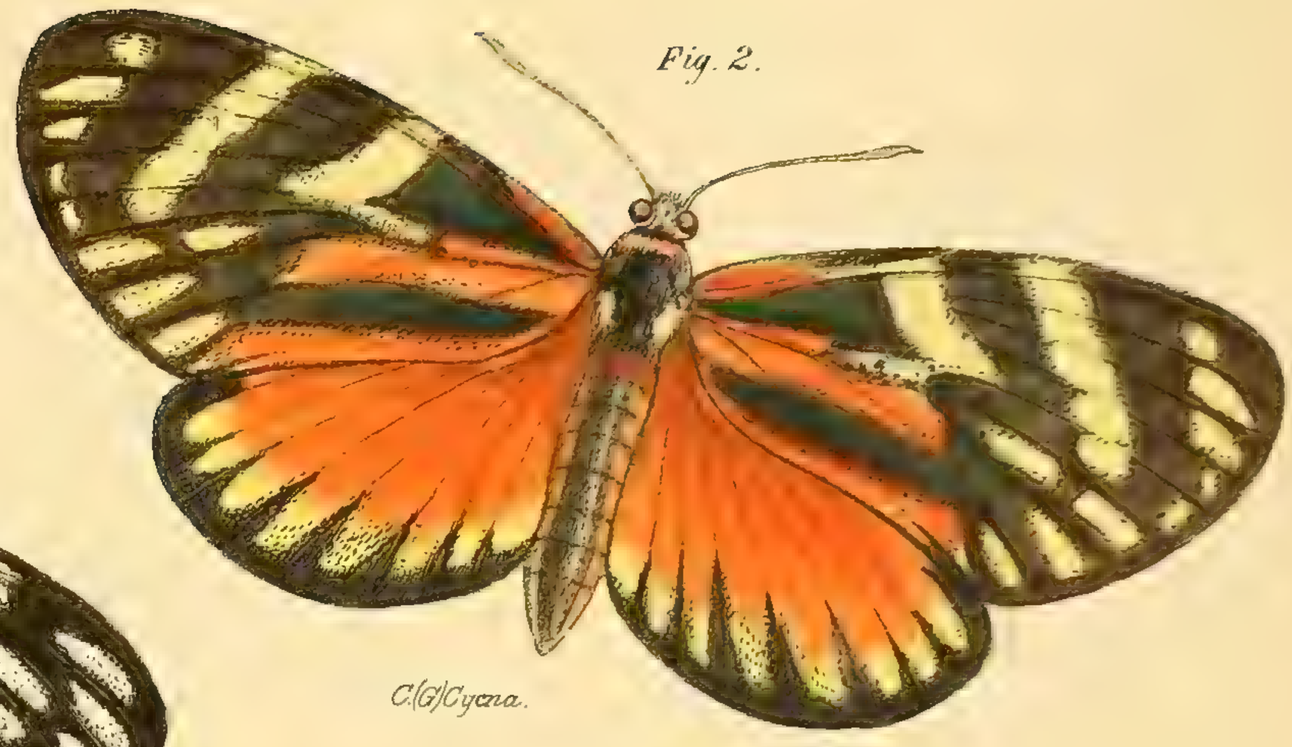
J O Westwood del

Fig. 1.



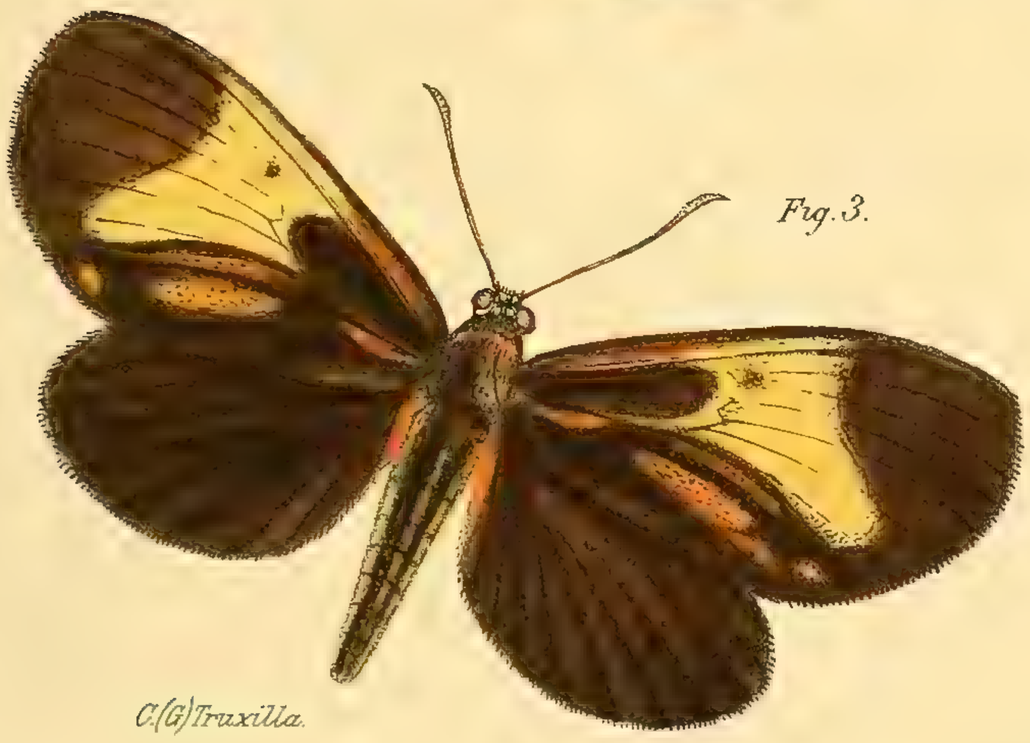
C.(G.)Salvinia.

Fig. 2.



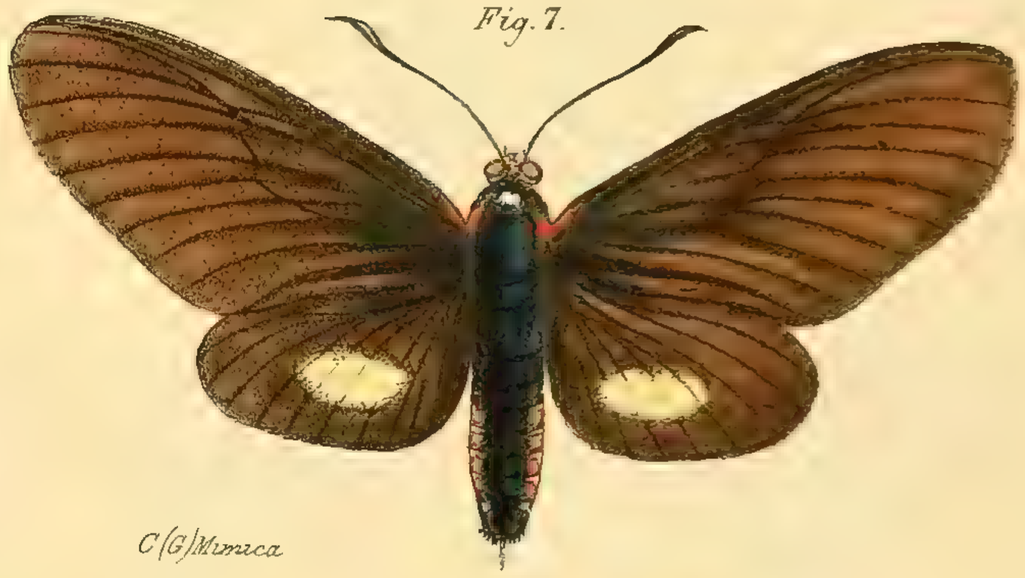
C.(G.)Cyana.

Fig. 3.



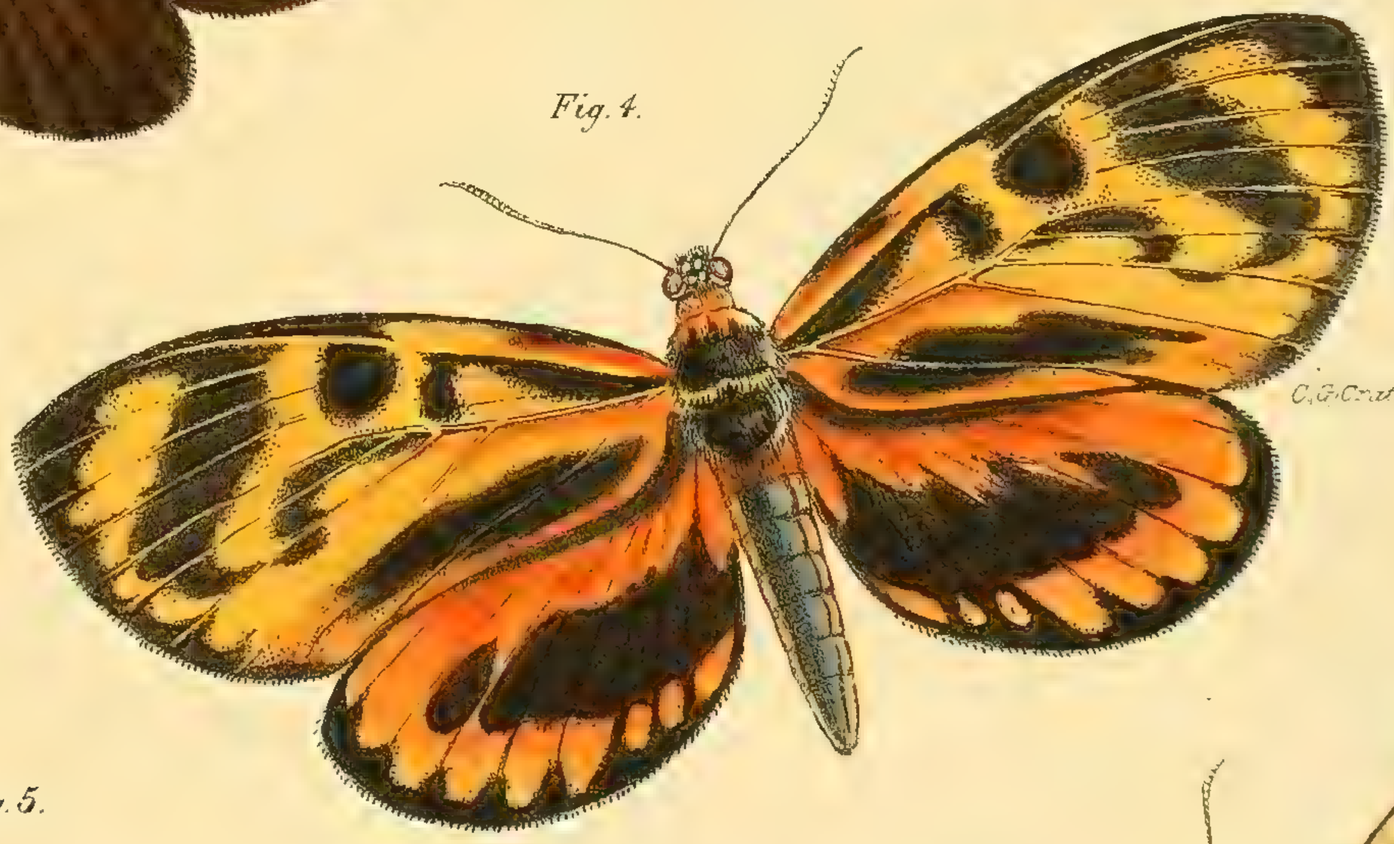
C.(G.)Traxilla.

Fig. 7.



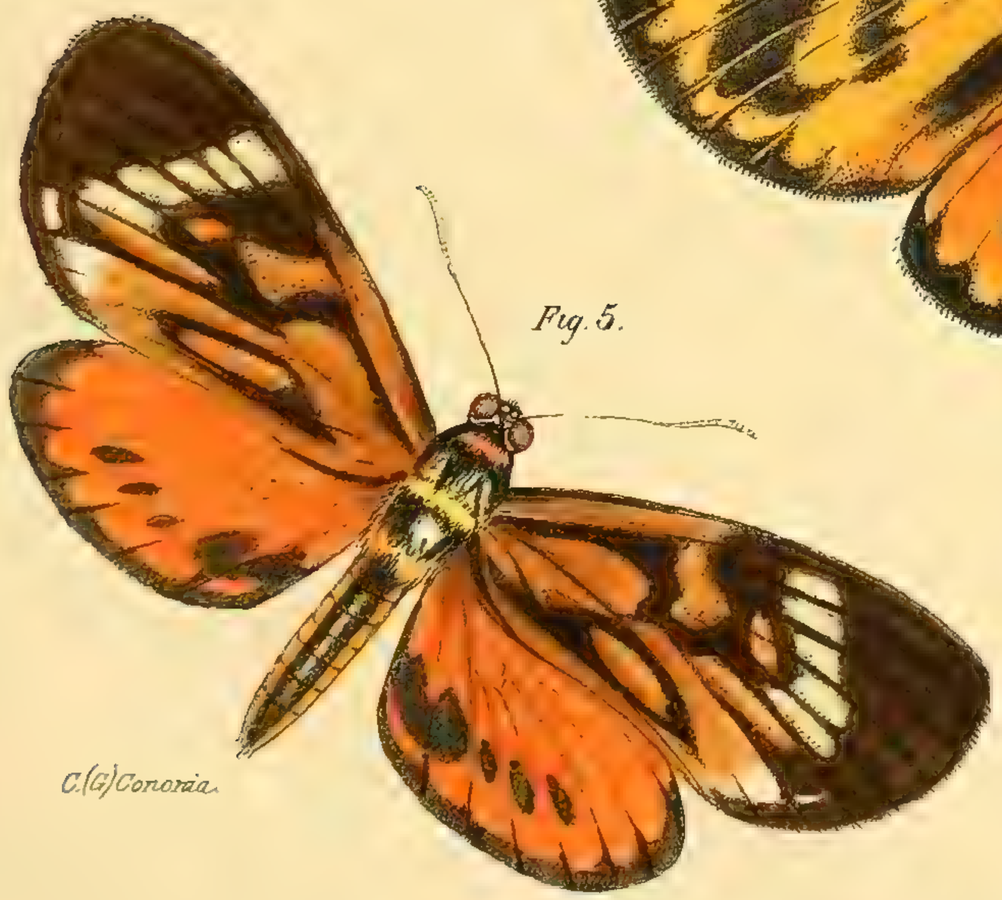
C.(G.)Mimica

Fig. 4.



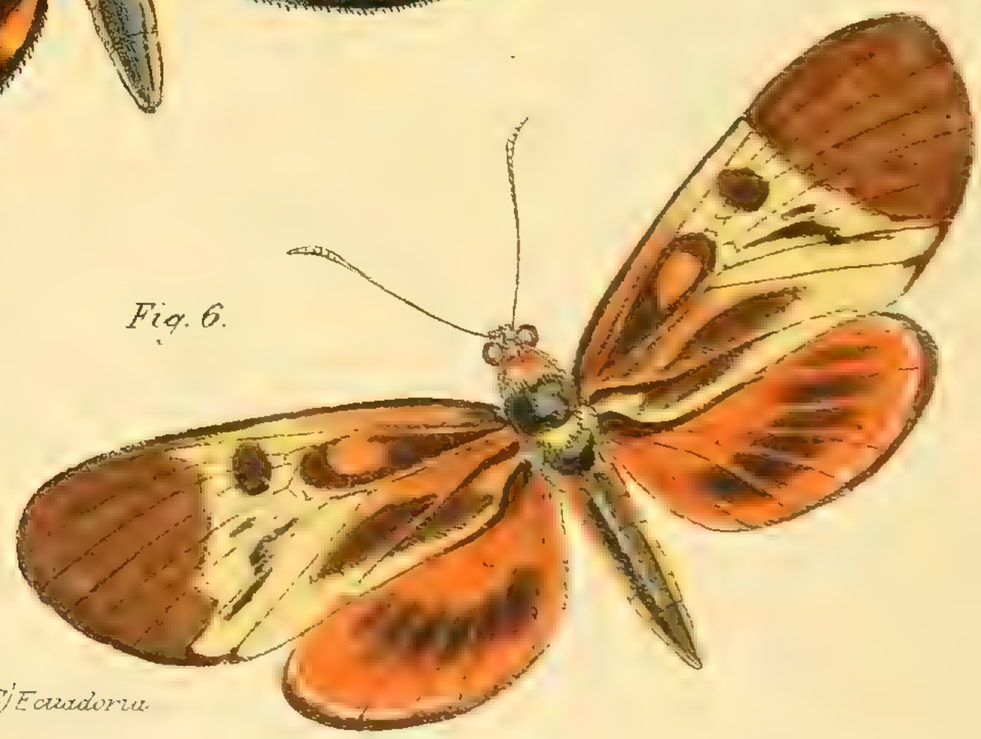
C.(G.)Cratira

Fig. 5.



C.(G.)Conoria.

Fig. 6.



C.(G.)Ecuadoria.

CBerjeau lith

NEW SPECIES OF (GAZERA.) CASTNIA.

Fig. 1.

H. Fenestrata

Fig. 3.

H. Exultans

Fig. 2.

H. Thridion

Fig. 4.

Fig. 5.

T. Orientalis.

S. Vagans

Fig. 12.

Fig. 13.

S. Graciosa

Fig. 9.

S. Obscurella

Fig. 8.

S. Plana.

S. Notha

Fig. 10.

Fig. 6.

S. Directa.

Fig. 11.

S. Hesperioides.

Fig. 7.

S. Varia.

Synemon Sophia

SPECIES & DETAILS. HECATESIA, TASCINA, & SYNEMON.